

EXHIBIT 1

BUREAU OF CLEAN WATER

Application Type Renewal
Facility Type Industrial
Major / Minor Major

**NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW)
AND IW STORMWATER**

Application No. PA0001627
APS ID 774001
Authorization ID 916425

Applicant and Facility Information

Applicant Name	<u>NRG Power Midwest LP</u>	Facility Name	<u>NRG Power Midwest LP - Cheswick Generating Station</u>
Applicant Address	<u>151 Porter Street</u> <u>Springdale, PA 15144-1452</u>	Facility Address	<u>151 Porter Street</u> <u>Springdale, PA 15144-1452</u>
Applicant Contact	<u>Jill Buckley</u>	Facility Contact	<u>Jill Buckley</u>
Applicant Phone	<u>(724) 275-1409</u>	Facility Phone	<u>(724) 275-1409</u>
Client ID	<u>141195</u>	Site ID	<u>245779</u>
SIC Code	<u>4911, 1222</u>	Municipality	<u>Springdale Borough</u>
SIC Description	<u>Trans. & Utilities - Electric Services</u>	County	<u>Allegheny</u>
Date Application Received	<u>February 29, 2012</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>February 29, 2012</u>	If No, Reason	<u>Major Facility</u>
Purpose of Application	<u>Renewal of NPDES permit for industrial waste and stormwater.</u>		

Summary of Review

On February 29, 2012 GenOn submitted an NPDES permit renewal application for the Cheswick Generating Station (Cheswick). In addition to the generating station, discharges from two associated facilities, LeFever Landfill and Monarch Mine, are included in the existing permit. The application was submitted on time, at least 180 days before the permit expired on August 31, 2012. In December 2012, GenOn merged with NRG and ownership of Cheswick was transferred to NRG.

Cheswick is a 560 MW coal-fired power plant built in 1970 and classified under SIC code 4911 for Electric Services. It is located along the north side of the Allegheny River, approximately 16 miles upstream of the confluence with the Ohio River. The generating station features Flue Gas Desulfurization (FGD) & Selective Catalytic Reduction (SCR) systems to treat sulfur oxide and nitrogen oxide emissions, respectively. The station has a once through cooling system with a design intake flow (DIF) of 375 million gallons per day (MGD) that withdraws from and discharges to the Allegheny River. The facility has two bottom ash ponds (bottom ash recycle pond & bottom ash emergency pond) which contain legacy bottom ash transport water. In 2016, NRG installed a Remote Submerged Flight Conveyor, to handle bottom ash transport water. The conveyor is closed-loop with a 180,000-gallon capacity. Currently, NRG has an agreement with Duquesne Light Company to accept leachate from closed fly ash ponds, and the leachate is pumped into the ash ponds via hyrobin sumps. See Attachment A for site maps.

The discharges at Cheswick consist of 5 outfalls and 7 Internal Monitoring Points (IMPs):

- Outfall 002 – Discharge from the Monarch Mine Dewatering Plant (MMDP)
- Outfall 003 – Main discharge from the generating station, consisting of 7 IMPs:
 - IMP 103 – Boiler blowdown
 - IMPs 203 & 303 – Ponds containing bottom ash transport water. These IMPs discharge alternately
 - IMP 403 – Coal pile runoff
 - IMP 503 – FGD wastewater
 - IMP 603 – Miscellaneous low-volume wastes

Approve	Deny	Signatures	Date
X		Maria Schumack / Project Manager	December 27, 2017
X		Sean M. Furjanic, P.E. / Environmental Program Manager	December 27, 2017

Summary of Review

- IMP 803 – combination of IMPs 203, 303, 403, 503 & 603
- Outfall 004 – Intake filter backwash
- Outfall 005 – Stormwater from the MMDP
- Outfalls 010 & 011 – Stormwater from the LeFever Landfill

Little Deer Creek TMDL

The Little Deer Creek TMDL for Acid Mine Drainage (AMD) was approved by EPA on April 4, 2007. Little Deer Creek is also listed as impaired for turbidity, siltation and flow alterations caused by construction. However, all construction activities occurring at the time of the assessment were completed; therefore, those pollutants were not included in the TMDL.

Outfalls 002, 005, 010 and 011 discharge to segments of Little Deer Creek covered by the TMDL. The TMDL for Little Deer Creek consists of load allocations for four tributaries and three sampling sites along the stream. The point applicable to each of Cheswick's Outfalls is LTDR04. The water quality analysis conducted during the TMDL assessment determined that the measured and allowable metals loadings were equal. Because WQS are met, WLAs for metals were not developed for discharges above LTDR04.

Table C7. TMDL Calculations at Point LTDR04

Measured Sample Data			Allowable	
Parameter	Conc. (mg/l)	Load (lbs/day)	LTA Conc. (mg/l)	Load (lbs/day)
Al	0.50	23.8	0.50	23.8
Fe	0.45	21.2	0.45	21.2
Mn	0.18	8.8	0.18	8.8
Acidity	0.00	0.0	0.00	0.0
Alkalinity	156.36	7,417.8		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>002</u>	Design Flow (MGD)	<u>12.4</u>
Latitude	<u>40° 35' 8.0"</u>	Longitude	<u>-79° 49' 43.00"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Treated Mine Water</u>			
Receiving Waters	<u>Little Deer Creek</u>	Stream Code	<u>42289</u>
NHD Com ID	<u>123972685</u>	RMI	<u>0.87</u>
Drainage Area	<u>10.69</u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u>0.1069</u>	Q ₇₋₁₀ Basis	<u>StreamStats/Pollution Report</u>
Elevation (ft)	<u>850</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>TSF</u>
Existing Use	<u>TSF – Trout Sticking Fishery</u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Flow Alterations, Metals, Siltation, TDS, Turbidity</u>		
Source(s) of Impairment	<u>Abandoned Mine Drainage, Construction, Subsurface Mining</u>		
TMDL Status	<u>Final</u>	Name	<u>Little Deer Creek Watershed</u>
Background/Ambient Data	Data Source		
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake	<u>Oakmont Borough</u>		
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>9.2</u>
PWS RMI	<u>13</u>	Distance from Outfall (mi)	<u>~3</u>

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>003</u>	Design Flow (MGD)	<u>376</u>
Latitude	<u>40° 32' 12"</u>	Longitude	<u>-79° 47' 39"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>IW Process Effluent with ELG, Noncontact Cooling Water (NCCW)</u>			
Receiving Waters	<u>Allegheny River</u>	Stream Code	<u>42122</u>
NHD Com ID	<u>123972852</u>	RMI	<u>15.75</u>
Drainage Area	<u>11500</u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u>2761</u>	Q ₇₋₁₀ Basis	<u>USGS Stream Gage</u>
Elevation (ft)	<u>734.8</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data			
pH (SU)	<u>7</u>	Data Source	<u></u>
Temperature (°F)	<u></u>		<u></u>
Hardness (mg/L)	<u>87</u>		<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake <u>Oakmont Borough</u>			
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>9.2</u>
PWS RMI	<u>13</u>	Distance from Outfall (mi)	<u>2.4</u>

Other Comments: Outfall 003 is a combination of wastewaters from IMPs 101, 203, 303, 403, 503, & 603. The Oakmont Borough Intake is on the opposite side of the river of the outfalls as Cheswick and should not be affected by the discharge.

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>004</u>	Design Flow (MGD)	<u>0.75</u>
Latitude	<u>40° 32' 8.0"</u>	Longitude	<u>-79° 47' 20"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Intake Screen Backwash</u>			
Receiving Waters <u>Allegheny River</u>		Stream Code	<u>42122</u>
NHD Com ID	<u>123972852</u>	RMI	<u>15.8</u>
Drainage Area	<u>11500</u>	Yield (cfs/mi ²)	<u></u>
Q7-10 Flow (cfs)	<u>2761</u>	Q7-10 Basis	<u>USGS Stream Gage</u>
Elevation (ft)	<u>734.8</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake <u></u>			
PWS Waters	<u></u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u></u>

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>005</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 8.0"</u>	Longitude	<u>-79° 49' 43.0 "</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters <u>Little Deer Creek</u>		Stream Code	<u>42289</u>
NHD Com ID	<u>123972685</u>	RMI	<u></u>
Drainage Area	<u></u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u></u>	Q ₇₋₁₀ Basis	<u></u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>TSF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Flow Alterations, Metals, Siltation, TDS, Turbidity</u>		
Source(s) of Impairment	<u>Abandoned Mine Drainage, Construction, Subsurface Mining</u>		
TMDL Status	<u>Final</u>	Name	<u>Little Deer Creek Watershed</u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake			
PWS Waters	<u></u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u></u>

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>010</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 0.0"</u>	Longitude	<u>-79° 50' 0.0"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters <u>UNT Little Deer Creek</u>		Stream Code <u></u>	
NHD Com ID	<u>123972685</u>	RMI	<u>0.19</u>
Drainage Area	<u></u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u></u>	Q ₇₋₁₀ Basis	<u></u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>TSF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Flow Alterations, Metals, Siltation, TDS, Turbidity</u>		
Source(s) of Impairment	<u>Abandoned Mine Drainage, Abandoned Mine Drainage, Construction, Construction, Construction, Subsurface Mining</u>		
TMDL Status	<u>Final</u>	Name	<u>Little Deer Creek Watershed</u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake <u></u>			
PWS Waters	<u></u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u></u>

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>011</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 0.0"</u>	Longitude	<u>-79° 50' 0.0"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters <u>UNT to Little Deer Creek</u>		Stream Code <u></u>	
NHD Com ID	<u>123972685</u>	RMI	<u>0.19</u>
Drainage Area	<u></u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u></u>	Q ₇₋₁₀ Basis	<u></u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>TSF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Flow Alterations, Metals, Siltation, TDS, TDS, Turbidity</u>		
Source(s) of Impairment	<u>Abandoned Mine Drainage, Abandoned Mine Drainage, Construction, Construction, Construction, Subsurface Mining</u>		
TMDL Status	<u>Final</u>	Name	<u>Little Deer Creek Watershed</u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake <u></u>			
PWS Waters	<u></u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u></u>

NPDES Permit Fact Sheet
Cheswick Generating Station**NPDES Permit No. PA0001627****WQM Permits****Treatment Facility Name:** Cheswick Generating Station

WQM Permit No.	Issuance Date
0270205	03/17/2016
0277206	10/22/2014
0206202	10/22/2014
0272216	10/17/2014
0271208	10/10/2014
4671021	10/09/2014
0213200	09/06/2013

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Compliance History

Cheswick agreed to a Consent Assessment of Civil Penalty on December 4, 2017 based on an incident that occurred on August 15, 2017. On that date an unauthorized discharge of underflow solids at the Monarch Mine Dewatering Plant was found to be discharging to Little Deer Creek. The incident caused sludge to settle in the stream bed for approximately 2500 feet downstream of the discharge. Cleanup began on August 21, 2017 after an emergency encroachment permit was granted by DEP. Cleanup concluded on September 21, 2017. An NOV was issued on October 16, 2017.

DMR Data for Outfall 002 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD)												
Average Monthly	3.72	3.27	2.88	4.18	3.43	3.71						
Flow (MGD)												
Daily Maximum	4.02	4.02	4.02	4.67	4.02	4.02						
pH (S.U.)												
Minimum	8.2	8.2	8.2	8.1	8.1	8.2						
pH (S.U.)												
Maximum	8.6	8.4	8.4	8.5	8.5	8.2						
TRC (mg/L)												
Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1						
TRC (mg/L)												
Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1						
TSS (mg/L)												
Average Monthly	11	11	10	11	10	13						
TSS (mg/L)												
Daily Maximum	13	14	14	12	18	14						
Osmotic Pressure (mOs/kg)												
Average Monthly	34	35	36	38	35	33						
Osmotic Pressure (mOs/kg)												
Daily Maximum	37	37	38	40	38	33						
Total Aluminum (mg/L)												
Average Monthly	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Total Aluminum (mg/L)												
Daily Maximum	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Total Beryllium (mg/L)												
Average Monthly	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005						
Total Beryllium (mg/L)												
Daily Maximum	< 0.0005	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005						

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Total Cadmium (mg/L) Average Monthly	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002						
Total Cadmium (mg/L) Daily Maximum	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002						
Hexavalent Chromium (mg/L) Average Monthly	< 0.002	< 0.004	< 0.002	< 0.002	< 0.002	< 0.002						
Hexavalent Chromium (mg/L) Daily Maximum	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002						
Total Copper (mg/L) Average Monthly	< 0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001						
Total Copper (mg/L) Daily Maximum	0.004	< 0.001	0.002	0.001	< 0.001	< 0.001						
Free Cyanide (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02						
Free Cyanide (mg/L) Daily Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02						
Total Iron (mg/L) Average Monthly	0.39	0.33	0.29	0.31	0.2	0.25						
Total Iron (mg/L) Daily Maximum	0.44	0.41	0.37	0.43	0.3	0.32						
Total Manganese (mg/L) Average Monthly	0.02	0.02	0.04	0.03	0.04	0.05						
Total Manganese (mg/L) Daily Maximum	0.02	0.02	0.07	0.04	0.06	0.05						
Total Selenium (mg/L) Average Monthly	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003						
Total Selenium (mg/L) Daily Maximum	< 0.002	< 0.002	0.002	< 0.002	0.003	0.003						
Total Silver (mg/L) Average Monthly	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005						
Total Silver (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005						
Total Thallium (mg/L) Average Monthly	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005						
Total Thallium (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005						
Pentachloro-phenol (mg/L) Average Monthly	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002						

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Pentachloro-phenol (mg/L)												
Daily Maximum	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002						

Outfall 002 is the discharge from the Monarch Mine Dewatering Plant (MMDP). The plant was under construction from August 2016 until March 2017. During that time, there was no discharge from the MMDP.

DMR Data for Outfall 003 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD)												
Average Monthly	281.8	244.0	206.5	184.6	184.6	184.6	184.6	184.6	184.6	189.1	184.6	227.3
Flow (MGD)												
Daily Maximum	321.2	310.8	250.3	184.6	184.6	184.6	184.6	184.6	184.6	193.6	184.6	240.3
pH (S.U.)												
Minimum	7.4	7.2	7.4	7.1	6.9	6.9	6.5	7.0	7.1	7.1	7.4	7.1
pH (S.U.)												
Maximum	7.6	7.6	7.4	7.1	7.4	7.2	7.1	7.2	7.3	7.7	7.7	7.7
TRC (mg/L)												
Instantaneous												
Maximum	< 0.1	< 0.1	GG	GG	GG	< 0.1	GG	< 0.1	< 0.1	< 0.1	0.1	0.1
Temperature (°F)												
Average Monthly	91.6	87.1	66.9	65.4	60.5	63.4	56.4	63.1	63.3	81.3	91.4	97.8
Temperature (°F)												
Industrial Influent												
Average Monthly	76.3	70.8	65.9	57.8	51.5	49.8	51.2	39.3	55.9	64.6	76.0	81.9
Temperature (°F)												
Daily Maximum	107.4	109.6	98.6	79.7	84.1	80.2	74.4	75.9	89.2	109.9	111.4	135.7
Temperature (°F)												
Industrial Influent												
Daily Maximum	79.3	77.5	100.4	66.4	76.7	73.6	69.2	60.9	67.8	71.3	82.1	98.4
Heat Rejection Rate (MBTUs/hr)												
Average Monthly	1531.8	1469.6	208.9	1562.5	1431.9	1742.0	431.9	1528.8	880.6	1102.3	1221.7	1285.7
Heat Rejection Rate (MBTUs/hr)												
Daily Maximum	2082.8	2215.3	447.7	1562.5	1652.2	2271.2	1142.3	1906.9	941.6	1591.2	1861.3	1907.1
Total Lead (mg/L)												
Average Monthly	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 0.001
Total Lead (mg/L)												
Daily Maximum	0.002	0.002	0.001	< 0.001	0.002	< 0.001	< 0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001
Total Mercury (mg/L)												
Average Monthly	< 0.00000 4	< 0.00000 5	< 0.00000 4	0.00000 6	< 0.00000 7	< 0.00000 4	< 0.00000 4	< 0.00000 5	< 0.00000 4	< 0.00000 3	< 0.00000 4	< 0.00000 5

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Total Mercury (mg/L) Daily Maximum	0.00000 5	0.00000 8	< 0.00000 4	0.00000 6	0.00001 3	< 0.00000 4	< 0.00000 4	0.00000 8	< 0.00000 4	0.00000 4	0.00000 5	0.00000 7
Total Selenium (mg/L) Average Monthly	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Selenium (mg/L) Daily Maximum	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Silver (mg/L) Average Monthly	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Total Silver (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005

DMR Data for Outfall 004 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Flow (MGD) Daily Maximum	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75

DMR Data for Outfall 005 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
pH (S.U.) Minimum	8.2	8.0	8.1	7.4	7.4	7.8	8.1	8.0	8.1	7.9		8.2
pH (S.U.) Maximum	8.2	8.0	8.1	7.4	7.4	7.8	8.1	8.0	8.1	7.9		8.2
TSS (mg/L) Average Monthly	26	273	24	40	373	1750	47	702	1220	744		156
TSS (mg/L) Daily Maximum	26	273	24	40	373	1750	47	702	1220	744		156

DMR Data for IMP 103 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly	0.11	0.07	0.18	0.01	0.11	0.02	0.07	0.10	0.05	0.06	0.05	0.1
Flow (MGD) Daily Maximum	0.20	0.20	0.32	0.02	0.12	0.06	0.12	0.20	0.11	0.12	0.09	0.2
pH (S.U.) Minimum	7.2	6.7	6.6	7.5	7.8	8.2	8.5	8.2	7.5	8.1	7.2	7.7
pH (S.U.) Maximum	8.3	8.3	8.5	7.5	8.3	8.4	8.6	8.5	8.6	8.6	8.5	8.4

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

TSS (mg/L) Average Monthly	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1	< 4	< 2	< 1	< 2.5
TSS (mg/L) Daily Maximum	< 1	< 1	< 1	1	< 1	< 1	2	1	7	3	1	4

DMR Data for IMP 203 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly							0.01					
Flow (MGD) Daily Maximum							0.02					
pH (S.U.) Minimum							6.9					
pH (S.U.) Maximum							6.9					
TSS (mg/L) Average Monthly							< 5					
TSS (mg/L) Daily Maximum							< 5					

DMR Data for IMP 303 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly							0.01		0.10	0.23	0.19	0.29
Flow (MGD) Daily Maximum							0.02		0.19	0.46	0.38	0.58
pH (S.U.) Minimum							8.4		7.3	7.6	6.9	8.3
pH (S.U.) Maximum							8.4		7.5	8.4	8.6	8.6
TSS (mg/L) Average Monthly							< 5		8	< 9	12	13
TSS (mg/L) Daily Maximum							< 5		9	16	14	25

IMPs 203 & 303 are discharges from two bottom ash transport ponds, which discharged alternately. In 2016 a Remote Submerged Ash Conveyor was installed, which made the bottom ash handling system closed-loop, eliminating discharges of bottom ash transport water to the ponds. Therefore, discharges from IMPs 203 & 303 are now intermittent.

DMR Data for IMP 403 (from August 1, 2016 to July 31, 2017)

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly	0.37	0.49	0.34		0.48	0.7		0.44	0.23	0.64	0.6	0.37
Flow (MGD) Daily Maximum	0.37	0.52	0.39		0.48	1.23		0.67	0.39	0.82	1.14	0.37
pH (S.U.) Minimum	7.6	8.3	8.1		7.4	7.4		7.0	8.7	6.7	7.5	8.2
pH (S.U.) Maximum	7.6	8.8	8.5		7.4	7.8		8.7	8.7	8.7	8.6	8.2
TSS (mg/L) Instantaneous Maximum	3	5	12		5	5		11	11	3	46	3

DMR Data for IMP 503 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly	0.05	0.05		0.06	0.05	0.04	0.06	0.05	0.04	0.08	0.04	0.05
Flow (MGD) Daily Maximum	0.09	0.09		0.09	0.09	0.06	0.08	0.09	0.10	0.10	0.09	0.09
pH (S.U.) Minimum	7.9	8.1		7.9	8.4	8.4	8.5	8.4	8.2	8.3	8.4	8.3
pH (S.U.) Maximum	8.6	8.5		8.1	8.4	8.5	8.5	8.5	8.2	8.5	8.4	8.5
TSS (mg/L) Average Monthly	6	< 2.7		< 1	4	< 1	5	< 2	< 1	3	5	< 3.5
TSS (mg/L) Daily Maximum	10	5		< 1	7	1	5	6	< 1	7	7	6
Total Dissolved Solids (mg/L) Average Monthly	30767	25367		35950	26600	31250	29000	32000	20100	21825	33150	37083
Total Dissolved Solids (mg/L) Daily Maximum	33800	33000		38800	30000	33700	29000	34200	22400	27400	37600	44000
Oil and Grease (mg/L) Average Monthly	< 5	< 5		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Oil and Grease (mg/L) Daily Maximum	< 5	< 5		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 7
Total Aluminum (mg/L) Average Monthly	< 0.1	< 0.4		< 1.0	< 0.55	< 0.1	< 1.0	< 0.55	< 0.1	< 0.1	< 0.6	< 0.4
Total Aluminum (mg/L) Daily Maximum	0.2	< 1.0		< 1.0	< 1.0	< 0.1	< 1.0	< 1.0	< 0.1	0.1	< 1.0	< 1.0

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Total Arsenic (mg/L) Average Monthly	0.006	< 0.006		< 0.01	< 0.007	0.006	< 0.01	< 0.008	0.005	0.004	< 0.008	< 0.007
Total Arsenic (mg/L) Daily Maximum	0.007	< 0.01		< 0.01	< 0.01	0.006	< 0.01	< 0.01	0.005	0.005	< 0.01	< 0.01
Total Beryllium (mg/L) Average Monthly	< 0.001	< 0.004		< 0.01	< 0.006	< 0.001	< 0.01	< 0.005	< 0.001	< 0.001	< 0.006	< 0.004
Total Beryllium (mg/L) Daily Maximum	< 0.001	< 0.01		< 0.01	< 0.01	< 0.001	< 0.01	< 0.01	< 0.001	< 0.001	< 0.01	< 0.01
Total Boron (mg/L) Average Monthly	644	501		757	545	658	795	697	425	455	522	526
Total Boron (mg/L) Daily Maximum	692	627		811	675	730	795	770	489	549	545	669
Total Cadmium (mg/L) Average Monthly	< 0.003	< 0.008		< 0.02	< 0.011	< 0.002	< 0.02	< 0.01	< 0.002	< 0.002	< 0.01	< 0.008
Total Cadmium (mg/L) Daily Maximum	0.005	< 0.02		< 0.02	< 0.02	< 0.002	< 0.02	< 0.02	< 0.002	< 0.002	< 0.02	< 0.02
Total Chromium (III) (mg/L) Average Monthly	< 0.02	< 0.02		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Chromium (III) (mg/L) Daily Maximum	< 0.02	< 0.02		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Copper (mg/L) Average Monthly	< 0.01	< 0.04		< 0.10	< 0.06	< 0.01	< 0.10	< 0.06	< 0.01	< 0.01	< 0.06	< 0.04
Total Copper (mg/L) Daily Maximum	< 0.01	< 0.1		< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.01	< 0.01	< 0.1	< 0.1
Dissolved Iron (mg/L) Average Monthly	< 0.05	< 0.2		< 0.5	< 0.28	< 0.05	< 0.50	< 0.28	< 0.05	< 0.05	< 0.28	< 0.2
Dissolved Iron (mg/L) Daily Maximum	< 0.05	< 0.5		< 0.5	< 0.50	< 0.05	< 0.50	< 0.50	< 0.05	< 0.05	< 0.5	< 0.5
Total Iron (mg/L) Average Monthly	0.2	< 0.2		< 0.5	< 0.28	< 0.07	< 0.50	< 0.28	< 0.07	< 0.06	< 0.28	< 0.2
Total Iron (mg/L) Daily Maximum	0.3	< 0.5		< 0.5	< 0.50	0.08	< 0.50	< 0.50	0.08	0.1	< 0.50	< 0.5
Total Lead (mg/L) Average Monthly	< 0.001	< 0.004		< 0.01	< 0.006	< 0.006	< 0.01	< 0.006	< 0.001	< 0.001	< 0.006	< 0.08
Total Lead (mg/L) Daily Maximum	< 0.001	< 0.01		< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.001	< 0.001	< 0.01	< 0.2
Total Manganese (mg/L) Average Monthly	33.5	29.1		64	31	31.1	19	37	28	18	8	4.5
Total Manganese (mg/L) Daily Maximum	59.3	34.7		70	32	33.5	19	45	36	31	10	12.2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Total Mercury (mg/L) Average Monthly	0.00019	0.00008		0.00005 6	0.00005 1	0.00005	0.00003 9	0.00007 1	0.00007	< 0.00002 8	0.00009 9	0.00003 9
Total Mercury (mg/L) Daily Maximum	0.00026	0.00016		0.00006 0	0.00005 6	0.00007	0.00003 9	0.00008 4	0.00009	0.00004 5	0.00014 1	0.00004 8
Total Nickel (mg/L) Average Monthly	0.05	< 0.09		< 0.13	< 0.08	0.03	< 0.10	< 0.06	0.05	0.02	< 0.06	< 0.04
Total Nickel (mg/L) Daily Maximum	0.09	0.11		0.15	< 0.10	0.04	< 0.10	< 0.10	0.06	0.03	< 0.1	< 0.1
Total Selenium (mg/L) Average Monthly	0.20	0.15		0.28	0.18	0.19	0.27	0.14	0.07	0.09	0.16	0.13
Total Selenium (mg/L) Daily Maximum	0.22	0.22		0.29	0.23	0.20	0.27	0.18	0.08	0.12	0.17	0.20
Dissolved Selenium (mg/L) Average Monthly	0.18	0.16		0.29	0.18	0.16	0.26	0.14	0.07	< 0.09	0.17	0.12
Dissolved Selenium (mg/L) Daily Maximum	0.21	0.22		0.30	0.23	0.19	0.26	0.20	0.08	0.11	0.20	0.17
Total Silver (mg/L) Average Monthly	< 0.005	< 0.02		< 0.05	< 0.028	< 0.005	< 0.05	< 0.028	< 0.005	< 0.005	< 0.028	< 0.02
Total Silver (mg/L) Daily Maximum	< 0.005	< 0.05		< 0.05	< 0.05	< 0.005	< 0.05	< 0.05	< 0.005	< 0.005	< 0.05	< 0.05
Total Zinc (mg/L) Average Monthly	< 0.01	< 0.04		< 0.10	< 0.06	< 0.01	< 0.10	< 0.06	< 0.01	< 0.01	< 0.06	< 0.04
Total Zinc (mg/L) Daily Maximum	0.02	< 0.1		< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.01	< 0.01	< 0.1	< 0.1
Chloride (mg/L) Average Monthly	15200	11643		17250	13900	15400	17200	11615	9980	10553	6650	15833
Chloride (mg/L) Daily Maximum	16900	15100		18800	16600	18100	17200	17500	11300	12900	12000	19800

DMR Data for IMP 603 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly	3.31	0.14	0.07	0.21	0.20	0.02	0.04	0.04	0.25	0.44	0.36	1.58
Flow (MGD) Daily Maximum	8.79	0.63	0.33	0.61	0.54	2.59	0.24	0.25	1.05	1.60	0.53	2.74
pH (S.U.) Minimum	7.2	7.6	7.4	8.1	7.6	8.1	7.7	6.8	6.9	7.3	7.3	6.9
pH (S.U.) Maximum	8.1	8.0	7.7	8.1	7.8	8.5	8.2	7.5	7.0	8.5	7.4	7.7

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

TSS (mg/L) Average Monthly	15	24	14	12	< 10	< 11	18	< 10	10	< 17	< 9.5	14
TSS (mg/L) Daily Maximum	26	35	22	24	16	18	26	14	14	26	16	28

DMR Data for IMP 803 (from August 1, 2016 to July 31, 2017)

Parameter	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16	OCT-16	SEP-16	AUG-16
Flow (MGD) Average Monthly	3.73	0.68	0.41	0.27	0.73	0.47	0.56	0.53	0.62	1.39	1.19	2.29
Flow (MGD) Daily Maximum	9.25	1.24	0.72	0.70	1.11	1.04	1.04	1.01	1.73	2.98	2.14	3.78
pH (S.U.) Minimum	7.3	7.5	7.5	6.8	7.4	7.6	6.9	6.7	7.0	7.9	7.3	7.9
pH (S.U.) Maximum	8.9	8.7	8.4	8.6	8.2	8.6	7.9	8.1	7.9	8.7	8.6	8.8

Development of Effluent Limitations

Outfall No.	002	Design Flow (MGD)	12.4
Latitude	40° 35' 8.00"	Longitude	-79° 49' 43.00"
Wastewater Description: Wastewater from the Monarch Mine Dewatering Plant			

Outfall 002 is the discharge from the Monarch Mine Dewatering Plant (MMDP) to Little Deer Creek. The MMDP treats water from the Harwick Mine Complex ("Harwick"). Leachate from the Cheswick Ash Disposal Site ("landfill"), a captive waste landfill accepting coal-combustion by products from Cheswick, was previously discharged into Harwick. Based on a Consent Order and Agreement (COA) in 2014, several updates were made to the plant, resulting from a 2008 NOV issued by DEP for failure by the plant to pump 5 MGD from the mine pool. Upgrades include leachate is being pumped directly to the MMDP, a filter press was installed, and NRG will discontinue injections into the mine pool. In addition, NRG will maintain a maximum mine pool elevation of 720 feet.

Technology-Based Limitations

During the last permit renewal, the Effluent Limitation Guidelines (ELGs) for the Coal Mining Point Source Category at 40 CFR Part 434 were applied at Outfall 002. The limits are at 40 CFR §§ 434.52 and 434.53 for acid mine drainage discharges are:

Pollutant	Daily Maximum	Monthly Average
	Concentration in mg/L	
Total Iron	7.0	3.5
Total Manganese	4.0	2.0
TSS	70.0	35.0
pH	Within the range of 6.0 to 9.0 at all times	

In addition, during a previous permit renewal the following BPJ TBELs were developed:

Pollutant	Average Monthly (mg/L)	Daily Maximum (mg/L)
Total Beryllium	0.01	0.02
Total Cadmium	0.0003	0.0006
Hexavalent Chromium	0.006	0.012

According to eDMR data the MMDP is able to meet the BPJ limits.

Water Quality-Based Limitations

A reasonable potential (RP) analysis was conducted using DEP's Toxics Screening Analysis (Attachment D) and the sampling results submitted by Cheswick in the 2012 permit application. Antimony, Arsenic, Lead, Benzo(a)Anthracene, Benzo(a)Pyrene, 3,4-Benzofluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Hexachlorobutadiene, Indeno(1,2,3-cd)Pyrene, n-Nitrosodiphenylamine, and Phenanthrene were determined to be candidates for modeling in PENTOXSD (Attachment D).

A discharge flow of 12.4 MGD as reported on the permit application was used in PENTOXSD. A Q₇₋₁₀ flow of 0.1069 cfs used in the last permit, which is consistent with the value calculated by PA StreamStats, was used in the modeling.

The PENTOXSD results and Toxics Screening Analysis Spreadsheet determined that WQBELs were necessary for the pollutants listed below. Mass-based limits were determined by multiplying the concentration-based limit by the flow and a conversion factor of 8.34.

Pollutant	Mass (lb/day)		Concentration (mg/L)	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum
Total Antimony	0.582	0.909	0.00563	0.00879
Total Arsenic	1.04	1.624	0.01006	0.01570
Total Lead	0.331	0.516	0.0032	0.00499
Benzo(a)Anthracene	0.00041	0.00062	0.000004	0.000006

Benzo(a)Pyrene	0.00041	0.00062	0.000004	0.000006
3,4-Benzofluoranthene	0.00041	0.00062	0.000004	0.000006
Benzo(k)Fluoranthene	0.00041	0.00062	0.000004	0.000006
Chrysene	0.00041	0.00062	0.000004	0.000006
Dibenzo(a,h)Anthracene	0.00041	0.00062	0.000004	0.000006
Hexachlorobutadiene	0.048	0.074	0.00046	0.00072
Indeno(1,2,3-cd)Pyrene	0.00041	0.00062	0.000004	0.000006
n-Nitrosodiphenylamine	0.36	0.56	0.035	0.054
Phenanthrene	0.103	0.16	0.001	0.0016

The Toxics Screening Analysis recommended WQBELs for Antimony, Arsenic, Lead, Benzo(a)Anthracene, Benzo(a)Pyrene, 3,4-Benzofluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Hexachlorobutadiene, Indeno(1,2,3-cd)Pyrene, n-Nitrosodiphenylamine, and Phenanthrene because non-detect results were reported, but Target Quantitation Limits (TQLs) were not met. The QLs reported were more than 50% of the WQBEL, and therefore the recommendation is to establish WQBELs as limits. The draft permit cover letter will offer the permittee the opportunity to retest these parameters at lower QLs so that the Department can reevaluate the need for effluent limits.

Little Deer Creek Impairment and TMDL

There is no WLA listed in the Little Creek TMDL for Cheswick, however the Average Monthly Limits (AMLs) in the current permit are consistent with the TMDL because they are not above water quality criteria. The AML for Total Iron is 1.5 mg/L and will remain unchanged. The AMLs for Total Aluminum and Total Manganese are both below criteria; 0.48 mg/L and 0.87 mg/L, respectively. While it is generally not appropriate for DEP to establish WQBELs below water quality criteria, the limits will remain in place due to anti-backsliding considerations. The originally developed Maximum Daily Limits of 0.96 mg/L and 1.74 mg/L for Aluminum and Manganese, respectively, will remain in the permit. Mass-based limits will be developed for each of these parameters by multiplying the concentration based limit by the flow and a conversion factor of 8.34.

Little Deer Creek is also impaired for TDS, siltation and turbidity. Monitoring for TDS and its constituents (Chloride, Bromide and Sulfide) will be included in the draft permit.

TBELs vs. WQBELs

For pollutants that have both WQBELs and TBELs, an analysis of Average Monthly WQBELs vs. Average Monthly TBELs is outlined in the table below. The more stringent of the two is presented as bold and shaded values, and will be implemented in the permit.

Pollutant	WQBEL (mg/L) ¹	WQBEL (lbs/day) ¹	TBEL (mg/L)	TBEL (lbs/day)
Total Iron	1.5	155.124	3.5	N/A
Total Manganese	0.87	89.97	2.0	N/A

- 1) The WQBELs for Total Iron and Total Manganese were developed based on the Little Deer Creek Impairment and TMDL.

Anti-Backsliding

The limits in the current permit are outlined in the table below. The bolded parameters are WQBELs in the current permit, but were not determined to be parameters of concern during the renewal evaluation because the maximum reported value on the application and DMRs was either below criteria or below the Target Quantitation Limit. However, due to anti-backsliding requirements these highlighted WQBELs will remain in the permit. Mass-based limits will not be developed for these parameters.

Pollutant	Average Monthly (mg/L)	Maximum Daily (mg/L)	Basis
TSS	35	70	ELG TBEL
TRC	M&R	M&R	WQBEL
Total Aluminum	0.48	0.96	WQBEL
Total Iron	1.5	3.0	WQBEL

Total Manganese	0.87	1.74	WQBEL
Total Beryllium	0.01	0.02	BPJ TBEL
Total Cadmium	0.0003	0.0006	BPJ TBEL
Hexavalent Chromium	0.006	0.012	BPJ TBEL
Total Silver	0.003	0.006	WQBEL
Total Thallium	0.002	0.004	WQBEL
Total Copper	0.009	0.018	WQBEL
Pentachlorophenol	0.0003	0.0006	WQBEL
Total Selenium	0.005	0.01	WQBEL
Free Cyanide	M&R	M&R	WQBEL
Sulfate	M&R	M&R	WQBEL
Osmotic Pressure (mOs/kg)	50	100	WQBEL

Sample Type and Frequency

Sample types and frequencies are designated as outlined in Chapter 6 of the Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (362-0400-001). All parameters with a sample type of 24-hour composite will have an instantaneous maximum developed by multiplying the AML by 2.5.

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Proposed Effluent Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	Report	Report	XXX	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	35	70	XXX	1/week	24-Hr Composite
Total Dissolved Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Osmotic Pressure (mOs/kg)	XXX	XXX	XXX	50	100	XXX	1/week	Grab
Aluminum, Total	49.64	99.28	XXX	0.48	0.96	1.2	1/week	24-Hr Composite
Antimony, Total	0.58	0.91	XXX	0.0056	0.0088	0.014	1/week	24-Hr Composite
Arsenic, Total	1.04	1.62	XXX	0.01	0.016	0.025	1/week	24-Hr Composite
Beryllium, Total	XXX	XXX	XXX	0.01	0.02	0.025	1/week	24-Hr Composite
Cadmium, Total	XXX	XXX	XXX	0.0003	0.0006	0.00075	1/week	24-Hr Composite
Chromium, Hexavalent	XXX	XXX	XXX	0.006	0.012	XXX	1/week	24-Hr Composite
Copper, Total	XXX	XXX	XXX	0.009	0.018	0.023	1/week	24-Hr Composite
Cyanide, Free	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Iron, Total	155.24	310.25	XXX	1.5	3.0	3.75	1/week	24-Hr Composite
Lead, Total	0.33	0.52	XXX	0.0032	0.005	0.008	1/week	24-Hr Composite
Manganese, Total	89.97	179.95	XXX	0.87	1.74	2.18	1/week	24-Hr Composite
Selenium, Total	XXX	XXX	XXX	0.005	0.01	0.0125	1/week	24-Hr Composite

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Proposed Effluent Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Silver, Total	XXX	XXX	XXX	0.003	0.006	0.0075	1/week	24-Hr Composite
Sulfate, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Thallium, Total	XXX	XXX	XXX	0.002	0.004	0.005	1/week	24-Hr Composite
Pentachlorophenol	XXX	XXX	XXX	0.0003	0.0006	0.00075	1/month	24-Hr Composite
Benzo(a)Anthracene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
Benzo(a)Pyrene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
3,4-Benzofluoranthene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
Benzo(k)Fluoranthene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
Chrysene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
Dibenzo(a,h)Anthracene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
Hexachlorobutadiene	0.048	0.074	XXX	0.00046	0.00072	0.0012	1/week	24-Hr Composite
Indeno(1,2,3-cd)Pyrene	0.00041	0.00062	XXX	0.000004	0.000006	0.00001	1/week	24-Hr Composite
n-Nitrosodiphenylamine	0.36	0.56	XXX	0.035	0.054	0.088	1/week	24-Hr Composite
Phenanthrene	0.103	0.16	XXX	0.001	0.0016	0.0025	1/week	24-Hr Composite
Chloride	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Bromide	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Development of Effluent Limitations

Outfall No.	003	Design Flow (MGD)	376
Latitude	40° 32' 12.00"	Longitude	-79° 47' 39.00"
Wastewater Description: IW Process Effluent with ELG, Noncontact Cooling Water (NCCW)			

Outfall 003 is the primary outfall at the facility, receiving once-through non-contact cooling water, uncontaminated stormwater, and flow from IMPs 103 and 803, which receives flow from IMPs 203, 303, 403, 503 and 603. A discharge pipe enters approximately midway into a constructed basin in the Allegheny River, which has an overflow weir at the downstream end.

Technology-Based Limitations

Effluent limits applicable to once-through cooling are at 40 CFR § 423.13(b)(1):

Pollutant	Maximum (mg/L)
Total Residual Chlorine	0.2

Additionally, as required by 40 CFR § 423.13(b)(2): Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control. Simultaneous multi-unit chlorination is permitted. This will be included as a Part C condition.

In addition, pH limits in accordance with 25 Pa. Code § 95.2(2) apply.

TBELs for all other wastestreams discharging via Outfall 003 will be implemented at the respective IMPs before combining at Outfall 003.

Water Quality-Based Limitations (at each IMP)

A water-quality analysis will be conducted for each IMP separately. WQBELs will be implemented at IMPs and will not be included for Outfall 003.

A Q_{7-10} flow of 2761 cfs at Outfall 003 was calculated using flow data from USGS Gage 03049500 on the Allegheny River at Natrona, PA. The Q_{7-10} at the gage was calculated using DFLOW (results are provided in Attachment B) and then translated to the location of the Outfall 003 on the Allegheny River. This design stream flow will be used to develop WQBELs for all IMPs contributing to Outfall 003. The calculation is below:

$$\frac{Flow_{gage}}{Drainage Area_{gage}} = \frac{Flow_{outfall}}{Drainage Area_{outfall}}$$

$$\frac{2740 \text{ cfs}}{11410 \text{ mi}^2} = \frac{Q_{7-10}}{11500 \text{ mi}^2}$$

$$Q_{7-10} = 2761 \text{ cfs}$$

316(a) Thermal Requirements

Water from the once-through cooling system is discharged via Outfall 003 and makes up a majority (~99%) of the effluent. Cheswick does not have any cooling towers. The Allegheny River is a Warm Water Fishery (WWF) with applicable criteria in 25 Pa. Code § 93.7. During the last permit issuance the Department approved Cheswick's request for an extension of its thermal variance under the CWA Section 316(a). In order to extend the variance beyond the permit term the permit required Cheswick to complete a thermal profile study. As required by the permit Cheswick submitted the study with the permit application 180 days before the permit expired.

The Thermal Spreadsheet (Attachment C) was run and indicated that Cheswick would not be able to meet limits that would ensure criteria for WWF was met instream.

However, as requested, the variance will be extended for this permit term. A condition requiring Cheswick to complete an additional 316(a) evaluation study will be included in Part C of the permit. The study will be due with the permit renewal application.

The limit for the temperature variance is a Heat Rejection Rate of 2.69×10^9 BTU/hr. Additionally, discharge temperature will be monitored continuously.

The public notice for the draft permit will comply with the requirements at 40 CFR § 124.57.

Total Dissolved Solids (TDS)

The permittee has been monitoring Total Dissolved Solids (TDS) and Chloride at IMP 503 (FGD Outfall). The average TDS from 2011 to 2017 was 27,300 mg/l with 51,400 mg/l as the maximum during the same time period. On the permit application, the average TDS at Outfall 003 was 159 mg/L and the maximum was 186 mg/L. IMP 503 discharges via Outfall 003, but is significantly diluted by once-through cooling water. For the purpose of compliance with 25 Pa. Code § 95.10 as it relates to TDS loading, this facility is classified as "Authorized Load/No Increase." Since the Department approved the discharge prior to August 2010, the treatment requirement for TDS under 25 Pa. Code § 95.10 is not required. Monitoring for TDS, chloride, bromide and sulfate will be included at IMP 503 and Outfall 003.

Federal Stream Electric ELG

Effluent Limitation Guidelines (ELGs) for flue gas desulfurization (FGD) wastewater and bottom ash transport water were published as a final rulemaking by the U.S. Environmental Protection Agency (EPA) in 2015, amending 40 CFR Part 423. EPA has subsequently postponed the initial compliance date for the FGD wastewater and for bottom ash transport water ELGs by two years. While EPA may ultimately rescind, revoke or modify the ELGs prior to the initial compliance date of November 1, 2020, the ELGs are effective now and DEP must utilize them in NPDES permits in accordance with the Clean Water Act and 40 CFR Part 122 regulations.

The ELG for bottom ash transport water will be applicable at IMPs 203 and 303, and the ELG for FGD will be applicable at IMP 503. Each of those IMPs discharge to the Allegheny River via Outfall 003.

Development of Effluent Limitations

IMP No.	103	Design Flow (MGD)	0.4 MGD
Latitude	40° 32' 12.00"	Longitude	-79° 47' 39.00"
Wastewater Description:	Boiler Blowdown		

IMP 103 consists of boiler blowdown from the main and auxiliary boilers. IMP 103 is sampled before confluence with IMP 803 and the NCCW, and discharges to the Allegheny River via Outfall 003.

Technology-Based Limitations

The applicable ELGs for IMP 103 are at 40 CFR § 423.12(b)(3) for low-volume wastes.

Pollutant	Effluent Limits	
	Daily Maximum (mg/L)	Average Monthly (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

In addition, pH limits in accordance with 25 Pa. Code § 95.2(2) apply.

Water Quality-Based Limitations

An RP analysis was conducted using DEP's Toxics Screening Analysis (Attachment D) and the sampling results submitted by Cheswick in the 2012 permit application, along with additional information submitted in December 2017. Antimony, Arsenic, Boron, Cadmium, Lead, Phenols, Selenium, and Thallium were determined to be candidates for modeling in PENTOXSD (Attachment D).

A discharge flow of 0.4 MGD as reported on the permit application and consistent with eDMR data was used in PENTOXSD. The PENTOXSD results and Toxics Screening Analysis Spreadsheet determined that there was no reasonable potential to violate water quality criteria.

Anti-Backsliding

The limits below are included in the current permit:

Pollutant	Effluent Limits	
	Daily Maximum (mg/L)	Average Monthly (mg/L)
TSS	100	30
Oil and Grease	20	15
pH (S.U.)	9.0	6.0 (minimum)

None of the current limits are less stringent than the limits that will be included in the reissuance. It is noted that the existing permit requires the facility to monitor twice in the same month for Oil and Grease and submit the results on a DMR on a quarterly basis. For the renewed permit, the Department will change the statistical base code from Average Monthly to Average Quarterly and keep the sampling frequency the same (2/quarter).

Sample Type and Frequency

Sample types and frequencies are designated as outlined in Chapter 6 of the Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (362-0400-001).

Development of Effluent Limitations

IMP No.	203/303	Design Flow (MGD)	1.2
Latitude	40° 35' 8.00"	Longitude	-79° 49' 43.00"
Wastewater Description: Effluent from bottom ash ponds			

IMPs 203 & 303 are bottom ash ponds that contain legacy bottom ash transport water. IMP 203 receives wastewater from the emergency pond and IMP 303 receives wastewater from the recycle pond. The IMPs typically do not discharge at the same time. In 2016 a Remote Submerged Flight Conveyor was installed to handle bottom ash transport water. The system is essentially closed loop and bottom ash transport water is no longer discharged to the ponds, except for leaks or discharges when maintenance is being performed on the system. Though an agreement with Duquesne Light, a small flow of leachate from the Kissick Landfill and leachate from the closed emergency fly ash pond is also treated in the ponds.

Technology-Based Limitations

BAT limits at 40 CFR § 423.13(k)(1)(i) are applicable to bottom ash transport water. These limitations were a part of the rulemaking published in 2015 and are also a part of EPA's reconsideration. BAT for bottom ash transport water is "there shall be no discharge of pollutants in bottom ash transport water." This BAT limitation only applies to bottom ash transport water generated after the compliance date. A footnote will be established in Part A of the permit prohibiting the discharge of bottom ash transport water generated after the compliance date, except where it is used in the FGD system. The legacy water contributed to the ponds prior to the compliance date will be subject to the BPT limits in 40 CFR § 423.12(b)(4):

Pollutant	BPT Effluent Limits	
	Daily Maximum (mg/L)	Average Monthly (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

Note: The legacy wastewater from the closed emergency fly ash pond is also covered under these BPT limits.

Compliance Time with BAT ELGs

The conditions of 40 CFR § 423.13(k)(1)(i) states that the compliance dates for bottom ash transport water are 'as soon as possible beginning November 1, 2020, but no later than December 31, 2023'. Cheswick has requested a compliance date of December 31, 2023 and provided justification for the latest possible date (Attachment E). DEP has accepted the justification and a compliance date of December 31, 2023 will be in Part C of the permit. This provision will not be applicable if EPA publishes notice of the rescission or revocation of the ELGs at 40 CFR § 423.13(k)(1)(i) prior to December 31, 2023.

Water Quality-Based Limitations

An RP analysis was conducted using DEP's Toxics Screening Analysis (Attachment D) and the sampling results submitted by Cheswick in the 2012 permit application. Antimony, Arsenic, Boron, Cadmium, Copper, Lead, Manganese, Phenols, Selenium, Silver, and Thallium were determined to be candidates for modeling in PENTOXSD (Attachment D).

A discharge flow of 1.2 MGD, which was the highest reported flow on DMRs over the last 5 years for either IMP, was used in PENTOXSD. A maximum discharge flow of 1.85 MGD was reported on the application, but that flow has not been reached over the past 5 years. The PENTOXSD results and Toxics Screening Analysis Spreadsheet determined that monitoring would be required for Thallium.

The Toxics Screening Analysis recommended monitoring for Thallium because non-detect results were reported, but Target Quantitation Limits (TQLs) were not met. The QLs reported were more than 10% of the WQBEL, and therefore the recommendation is to establish a monitoring requirement. The draft permit cover letter will offer the permittee the opportunity to retest these parameters at lower QLs so that the Department can reevaluate the need for effluent limits.

Anti-Backsliding

The limits below are included in the current permit:

Parameter	Average Monthly (mg/L)	Daily Maximum (mg/L)
Flow (MGD)	Monitor	Monitor
TSS	30	100

Oil and Grease	15	20
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None of the current limits are less stringent than the limits that will be included in the reissuance. It is noted that the existing permit requires the facility to monitor twice in the same month for Oil and Grease and submit the results on a DMR on a quarterly basis. For the renewed permit, the Department will change the statistical base code from Average Monthly to Average Quarterly and keep the sampling frequency the same (2/quarter).

Proposed Limits

Parameter	Average Monthly (mg/L)	Daily Maximum (mg/L)
Flow	Monitor and Report (MGD)	
pH	Between 6.0 and 9.0 SU	
TSS	30.0	100.0
Oil and Grease	15.0	20.0
Thallium	Monitor	Monitor

These limits are only applicable to bottom ash transport water generated before the compliance date. Bottom ash transport water generated after the compliance date will be prohibited from discharge, unless it is used in the FGD scrubber.

Sample Type and Frequency

Sample types and frequencies are designated as outlined in Chapter 6 of the Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (362-0400-001). All parameters with a sample type of 24-hour composite will have an instantaneous maximum developed by multiplying the AML by 2.5.

Development of Effluent Limitations

IMP No.	403	Design Flow (MGD)	1.23
Latitude	40° 32' 26.00"	Longitude	-79° 47' 36.00"
Wastewater Description: Treated Coal Pile Runoff			

Wastewater at IMP 403 consists flow from the coal pile runoff pond. The pond receives runoff from the coal pile and crusher house. Water in the pond is directed into the lime silo building for treatment and then returned to the pond. Discharges occur in batches when the effluent is meeting specified limits.

Technology-Based Limitations

The ELG at 40 CFR § 423.12(b)(9) for Coal Pile Runoff is applicable at IMP 403. The following limits apply:

Pollutant	Effluent Limits
	Maximum
TSS	50

In addition, pH limits in accordance with 25 Pa. Code § 95.2(2) apply.

Water Quality-Based Limitations

An RP analysis was conducted using DEP's Toxics Screening Analysis (Attachment D) and the sampling results submitted by Cheswick in the 2012 permit application. Antimony, Arsenic, Cadmium, Lead, Selenium and Thallium were determined to be candidates for modeling in PENTOXSD (Attachment D).

A discharge flow of 1.23 MGD, which was the maximum reported over the last 5 years of DMR data, was used in PENTOXSD. A maximum discharge rate of 2.12 MGD was reported on the application, but that discharge rate was not reported over the last 5 years. PENTOXSD results and Toxics Screening Analysis Spreadsheet determined reasonable potential did not exist for any parameters.

Anti-Backsliding

The only effluent limits in the current permit are the above listed TBELs for TSS and pH, and both will be included in the reissued permit.

Development of Effluent Limitations

IMP No.	503	Design Flow (MGD)	0.18
Latitude	40° 32' 36.00"	Longitude	-79° 47' 36.00"
Wastewater Description: Wastewater from the Flue Gas Desulfurization (FGD) System			

Wastewater from IMP 503 is discharged to the Allegheny River via Outfall 003. IMP 503 consists solely of wastewater from the Flue Gas Desulfurization (FGD) Treatment Plant. IMP 503 was designated as the FGD wastewater outfall during the last permit issuance. At that time the FGD system was not yet constructed; however, it is now currently in operation. The treatment system is comprised of the following treatment processes: equalization, neutralization, chemical precipitation, coagulation/flocculation, sedimentation, neutralization, filtration, and solids dewatering.

Technology-Based Limitations

During the last permit review there were no ELGs for FGD wastewater. TBELs were developed based on Best Professional Judgement (BPJ). The BPJ limits in the current permit were developed based on the performance of existing FGD wastewater treatment facilities and the expected performance of the proposed facility based on the expected influent and effluent quality submitted with the NPDES Amendment and Water Quality Management Part II applications. The following Average Monthly TBELs were included in the last permit issuance:

Pollutant	BPJ TBEL (mg/L)
Total Beryllium	0.8
Total Copper	0.1
Total Lead	0.1
Total Mercury	0.004
Total Silver	0.1

The new BAT limits for FGD wastewater are in 40 CFR § 423.13(g). BAT limits for FGD are currently being reconsidered, but nevertheless must be implemented according to the rule until EPA publishes a revision or revokes the limits. The BAT limits for FGD are:

Pollutant	Effluent Limitations	
	Daily Maximum	Average Monthly
Total Arsenic (µg/L)	11	8
Total Mercury (ng/L)	788	356
Total Selenium (µg/L)	23	12
Nitrate/nitrite as N (mg/L)	17.0	4.4

Mass-based limits were derived by multiplying the above limits by the flow and a conversion factor of 8.34 (for concentrations in mg/L) at IMP 503:

Pollutant	Effluent Limitations (lbs/day)	
	Daily Maximum	Average Monthly
Total Arsenic	0.002	0.0014
Total Mercury	0.00014	0.00006
Total Selenium	0.0041	0.0022
Nitrate/nitrite as N	3.06	0.792

The both the BPJ and BAT limits will be included in the reissued permit. The BPJ limit for Total Mercury will be an interim limit until the compliance date for the final BAT limit.

In addition, pH and Oil & Grease limits in accordance with 25 Pa. Code § 95.2(2) apply.

Compliance Date to meet BAT ELGs

The conditions of 40 CFR § 423.13(g) state that the compliance dates for FGD wastewater are “as soon as possible beginning November 1, 2020, but no later than December 31, 2023.” The BAT limits are based on the use of biological treatment which Cheswick does not currently employ. Cheswick has requested a compliance date of December 31, 2023 and provided justification for the latest possible date (Attachment E). DEP has accepted the justification and a compliance date of December 31, 2023. A footnote will be put in Part A of the permit stating that the effluent limitation guidelines (ELGs) for Best Available Technology (BAT) at 40 CFR § 423.13(g)(1)(i) will apply to wastewater from the FGD system beginning on December 31, 2023. If EPA publishes notice of the modification of the ELGs at 40 CFR § 423.13(g)(1)(i) prior to December 31, 2023, Cheswick will be required to achieve compliance with the modified ELGs as soon as possible but no later than the date established by federal regulations.

In the interim, Cheswick will be required to monitor and report for all ELG parameters. The previously imposed BPJ TBEL for Mercury will remain in the permit,

Water Quality-Based Limitations

An RP analysis was conducted using DEP’s Toxics Screening Analysis (Attachment D) and the sampling results submitted by Cheswick in the 2012 permit application. Antimony, Arsenic, Boron, Cadmium, Copper, Lead, Manganese, Phenols, Selenium, Silver, and Thallium were determined to be candidates for modeling in PENTOXSD.

A discharge flow of 0.18 MGD as reported on the permit application, and consistent with DMR data, was used in PENTOXSD (Attachment D).

The PENTOXSD results and Toxics Screening Analysis Spreadsheet determined that WQBELs were necessary for Boron. Mass-based limits were developed by multiplying the concentration based limits by the flow and a conversion factor of 8.34. The resulting WQBELs are:

Pollutant	Mass (lbs/day)		Concentration (mg/L)	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum
Total Boron	780.6	1,217.8	520	811

There are no applicable TBELs for Boron for this discharge, so the WQBELs for Boron will be included in the permit.

In addition to the limits outlined above, monitoring for TDS and its constituents, Chloride, Bromide, and Sulfate will be included at IMP 503 since they are pollutants of concern in Pennsylvania and are expected to be discharged from the FGD system.

Compliance Schedule for WQBELs

As indicated by permit application and DMR data Cheswick is not currently able to meet the new WQBEL for Total Boron. Toxics Reduction Evaluation Language will be included in Part C and a 3 year compliance schedule will be allowed to meet the Total Boron limit. A monitor and report requirement will be included for the first 3 years of the permit term.

Anti-Backsliding

All of the previously established BPJ TBELs will be included in the renewal. All final and interim limits are equal to or more stringent than the existing limits. The current permit has monitor and report requirements for Total Aluminum, Total Cadmium, Chromium III, Dissolved Iron, Total Iron, Dissolved Selenium, Total Nickel, Total Manganese, and Total Zinc which will continue in the renewal.

Sample Type and Frequency

Sample types and frequencies are designated as outlined in Chapter 6 of the Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (362-0400-001). All parameters with a sample type of 24-hour composite will have an instantaneous maximum developed by multiplying the AML by 2.5.

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Proposed Effluent Limits

From Permit Effective Date to Three Years Following Permit Effective Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/week	Grab
Total Suspended Solids	XXX	XXX	XXX	10.0	20.0	25.0	1/week	24-Hr Composite
Total Dissolved Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0	20.0	XXX	1/week	Grab
Nitrate/nitrite as N	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Arsenic, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Beryllium, Total	XXX	XXX	XXX	0.8	1.6	2.0	1/week	24-Hr Composite
Boron, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Cadmium, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Chromium III, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Copper, Total	XXX	XXX	XXX	0.1	0.2	0.25	1/week	24-Hr Composite
Iron, Dissolved	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Iron, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Lead, Total	XXX	XXX	XXX	0.1	0.2	0.25	1/week	24-Hr Composite
Manganese, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Mercury, Total	Report	Report	XXX	0.004	0.008	0.01	1/week	24-Hr Composite

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

From Permit Effective Date to Three Years Following Permit Effective Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Nickel, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Selenium, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Selenium, Dissolved	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Silver, Total	XXX	XXX	XXX	0.1	0.2	0.25	1/week	24-Hr Composite
Sulfate, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Zinc, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Chloride	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Bromide	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

From Three Years Following Permit Effective Date to Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/week	Grab
Total Suspended Solids	XXX	XXX	XXX	10.0	20.0	25.0	1/week	24-Hr Composite
Total Dissolved Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0	20.0	XXX	1/week	Grab
Nitrate/nitrite as N	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

From Three Years Following Permit Effective Date to Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Aluminum, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Arsenic, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Beryllium, Total	XXX	XXX	XXX	0.8	1.6	2.0	1/week	24-Hr Composite
Boron, Total	780.6	1,217.8	XXX	520	811	1,300	1/week	24-Hr Composite
Cadmium, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Chromium III, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Copper, Total	XXX	XXX	XXX	0.1	0.2	0.25	1/week	24-Hr Composite
Iron, Dissolved	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Iron, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Lead, Total	XXX	XXX	XXX	0.1	0.2	0.25	1/week	24-Hr Composite
Manganese, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Mercury, Total	Report	Report	XXX	0.004	0.008	0.01	1/week	24-Hr Composite
Nickel, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Selenium, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Selenium, Dissolved	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Silver, Total	XXX	XXX	XXX	0.1	0.2	.025	1/week	24-Hr Composite
Sulfate, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Zinc, Total	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

From Three Years Following Permit Effective Date to Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Chloride	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Bromide	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Development of Effluent Limitations

Outfall No.	603	Design Flow (MGD)	3.22
Latitude	40° 32' 36.00"	Longitude	-79° 47' 36.00"
Wastewater Description: IW Process Effluent with ELG			

IMP 603 receives wastewater from the north and south ponds. The ponds receive flow from ash sumps, miscellaneous low-volume wastes, floor drains and flow from storm water catch basins/trench drains on south side of coal pile.

Technology-Based Limitations

The applicable effluent limits are at 40 CFR § 423.12(b)(3) for low-volume wastes:

Pollutant	Effluent Limits	
	Daily Maximum (mg/L)	Average Monthly (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

In addition, pH limits in accordance with 25 Pa. Code § 95.2(2) apply.

Water Quality-Based Limitations

An RP analysis was conducted using DEP's Toxics Screening Analysis (Attachment D) and the sampling results submitted by Cheswick in the 2012 permit application, along with additional results submitted in December 2017. Antimony, Arsenic, Cadmium, Dissolved Iron, Lead, Manganese, Selenium and Thallium were determined to be candidates for modeling in PENTOXSD (Attachment D).

A discharge flow of 3.22 MGD as reported on the permit application, which is consistent with DMR data, was used in PENTOXSD. The PENTOXSD results and Toxics Screening Analysis Spreadsheet determined reasonable potential was established for Cadmium. The spreadsheet recommended monitoring for Cadmium.

The Toxics Screening Analysis recommended monitoring for Cadmium because non-detect results were reported, but Target Quantitation Limits (TQLs) were not met. The QLs reported were more than 10% of the calculated WQBEL, and therefore the recommendation is to establish monitoring requirements. The draft permit cover letter will offer the permittee the opportunity to retest these parameters at lower QLs so that the Department can reevaluate the need for monitoring.

Anti-Backsliding

The limits below are included in the current permit:

Pollutant	Effluent Limits	
	Daily Maximum (mg/L)	Average Monthly (mg/L)
TSS	100	30
Oil and Grease	20	15
pH (S.U.)	9.0	6.0 (minimum)

None of the current limits are less stringent than the limits that will be included in the reissuance. It is noted that the existing permit requires the facility to monitor twice in the same month for Oil and Grease and submit the results on a DMR on a quarterly basis. For the renewed permit, the Department will change the statistical base code from Average Monthly to Average Quarterly and keep the sampling frequency the same (2/quarter).

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Development of Effluent Limitations

Outfall No.	<u>803</u>	Design Flow (MGD)	<u>5.35</u>
Latitude	<u>40° 32' 12.00"</u>	Longitude	<u>-79° 47' 39.00"</u>
Wastewater Description: <u>Combination of IMPs 203, 303, 403, 503 and 603</u>			

IMP 803 receives flow from IMPs 203, 303, 403, 503, and 603 and discharges to the Allegheny River via Outfall 003. There are no applicable ELGs or WQBELs at this IMP as they are applied before combination at IMP 803. A water quality analysis was not conducted for IMP 803 because it was conducted at each contributing IMP.

pH limits in accordance with 25 Pa. Code § 95.2(2) apply. Additionally, Cheswick will be required to monitor flow at this IMP.

Development of Effluent Limitations

Outfall No.	004	Design Flow (MGD)	0.85
Latitude	40° 32' 8.00"	Longitude	-79° 47'20.00"
Wastewater Description: Screen Backwash			

Outfall 004 consists of intake screen backwash and screenhouse backwash from the debris removal system.

Technology-Based Limitations

There are no applicable ELGs at this Outfall. pH limits in accordance with 25 Pa. Code § 95.2(2) apply.

Water Quality-Based Limitations

DEP's Toxics Screening Analysis (Attachment D) was conducted using the sampling results submitted by Cheswick in the 2012 permit application. Antimony, Arsenic, Cadmium, Dissolved Iron, Lead, Manganese and Thallium were determined to be candidates for modeling in PENTOXSD (Attachment D). The Toxic Screening Analysis Spreadsheet determined reasonable potential was ruled out for all other pollutants.

Anti-Backsliding

The current pH limits will remain in the permit.

Development of Effluent Limitations

Outfall No.	<u>005</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 8.00"</u>	Longitude	<u>-79° 49' 43.00"</u>
Wastewater Description:	<u>Stormwater</u>		

Outfall 005 consists of stormwater from the Monarch Mine Dewatering Plant (MMDP) and discharges to Little Deer Creek downstream of Outfall 002. The previous renewal required Cheswick to complete a Stormwater Pollution Prevention Plan (SWPPP). The permit also required sampling for TSS and Hexavalent Chromium. After implementation of the SWPPP and one year of sampling Cheswick was able demonstrate that the stormwater was no longer contaminated with Hexavalent Chromium and monitoring was removed from the permit.

A condition in Part C of the permit will prescribe benchmark values for stormwater discharges. Benchmark values are a concept in the most recent version of the PAG-03 for Stormwater Discharges Associated with Industrial Activity. The benchmark values are not permit limits, however, if they are exceeded in two consecutive monitoring periods it will trigger a requirement for a corrective action plan to reduce the pollutant concentration. These values will also be applicable to the other stormwater discharges at Outfalls 010 and 011. Outfalls 010 and 011 discharge to an Unnamed Tributary of Little Deer Creek which is also included in the Little Deer Creek TMDL. WLAs for the discharges are not assigned in the TMDL so the benchmark values for the AMD constituents, Aluminum, Iron and Manganese, will be set to criteria.

The PAG-03 contains several appendices listing benchmark values for the associated Industrial Activity. Coal-mining is not included in the PAG-03, but is included in EPA's Multi-Sector General Permit (MSGP) for Discharges of Stormwater Associated with Industrial Activity. The pollutants listed in Sector H for Coal Mines and Coal Mine Related Facilities will be included at Outfall 005. The pollutants are Total Aluminum, Total Iron and TSS. The benchmark value for Total Aluminum in the MSGP is equal to DEP's criterion of 0.75 mg/L. The benchmark values of 1.5 mg/L and 1.0 mg/L will be established for Total Iron and Total Manganese, respectively, reflecting the most stringent water quality standard. The benchmark value of 100 mg/L for TSS in the MSGP is the same as the value listed in the Appendices for the PAG-03 and will also be included. The benchmarks that will apply to Outfalls 005, 010 and 011 are listed below.

Parameter	Benchmark Value (mg/L)
Total Suspended Solids	100
Total Aluminum	0.75
Total Iron	1.5
Total Manganese	1.0

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Development of Effluent Limitations

Outfall No.	<u>010</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 0.00"</u>	Longitude	<u>-79° 50' 0.00"</u>
Wastewater Description: <u>Stormwater</u>			

Outfall 010 is a stormwater outfall at the Lefever Ash Disposal Site that discharges to an Unnamed Tributary of Little Deer Creek. Analytical results submitted with the application are indicative of no exposure and fall below the no exposure benchmarks outlined in the current industrial and industrial stormwater permit applications. Since the stream is impaired and is a part of the Little Deer Creek TMDL, semi-annual monitoring requirements for Total Aluminum, Total Iron, and Total Manganese will be included in the renewal, along with pH and TSS. Benchmark values will be established as discussed previously for Outfall 005.

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Development of Effluent Limitations			
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Outfall No.	<u>011</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 0.00"</u>	Longitude	<u>-79° 50' 0.00"</u>
Wastewater Description:	<u>Stormwater</u>		

Outfall 011 is a stormwater outfall at the Lefever Ash Disposal Site that discharges to an unnamed Tributary of Little Deer Creek. Analytical results submitted with the application were not indicative of no exposure and showed elevated levels of Aluminum and Iron. Monitoring at Outfall 011 will be required monthly for the parameters listed in the Little Deer Creek TMDL, along with pH and TSS. Benchmark values will be established as discussed previously for Outfall 005.

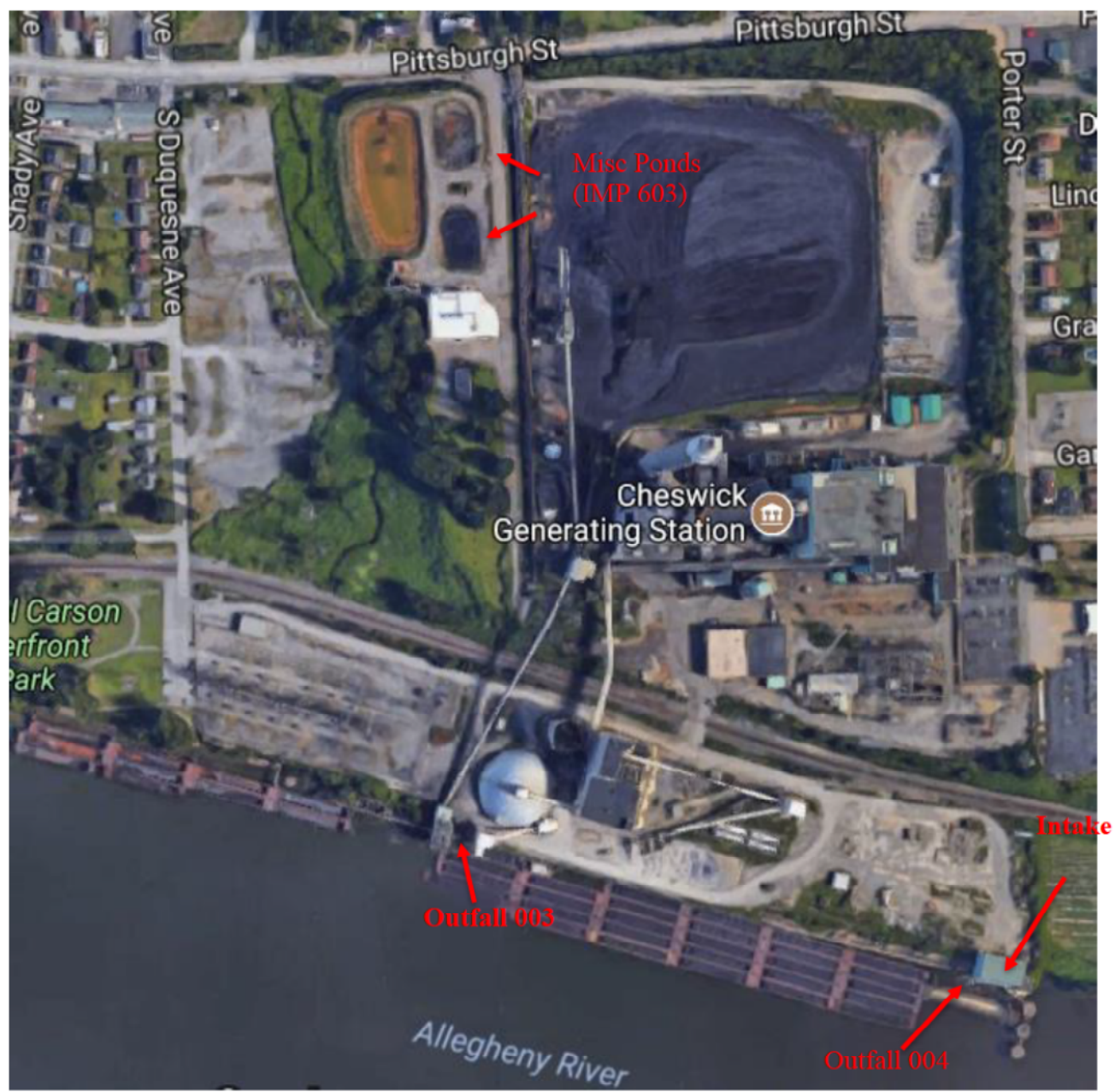
316(b) Cooling Water Intake Structures

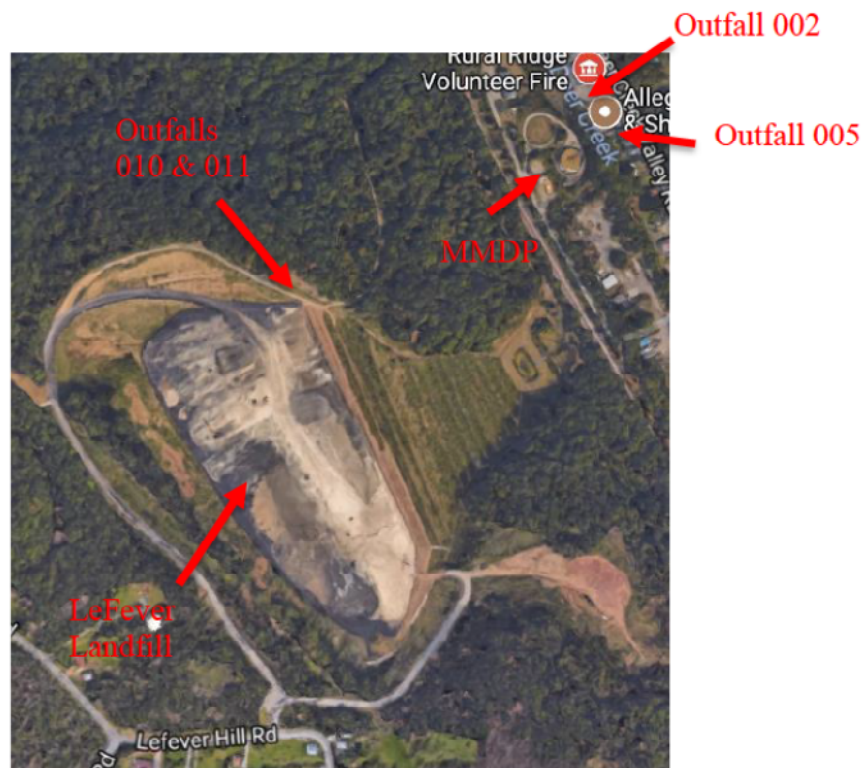
Cheswick operates a cooling water intake system consisting of three intake bays equipped with debris boom, curtain wall, bar screens and vertical 12 ft wide traveling screens. The Design Intake Flow (DIF) is 376 MGD and the Actual Intake Flow is 185 MGD. Under the “Existing Facilities Rules” made final by EPA on August 15, 2014, Cheswick is an Existing Facility.

Since the AIF is great than 125 MGD Cheswick is required to complete the studies outlined in 40 CFR §§ 122.21(r)(9)-(12) in addition to the permit application requirements for all Existing Facilities outlined in 40 CFR §§ 122.21(r)(2)-(8). The application material has not yet been submitted, because the application was submitted before the new rulemaking was promulgated. Therefore a BTA determination for impingement and entrainment will not be made until the next permit cycle.

Cheswick has begun to develop the studies outlined in 40 CFR §§ 122.21(r)(9)-(12). The Entrainment Characterization Plan was approved on January 5, 2016 and they are currently carrying out a 2-year study. Part C conditions will be developed with a schedule of submission for the application material in advance of the next permit application.

Attachment A – Facility Maps





Attachment B – DFLOW Results

DFLOW Results

Gage	Period	Days in Record	Zero/Missing	Percentile	Excur per 3 yr	7Q10	Percentile	Excur per 3 yr	7Qy Type
03049500 - Allegheny River at Natrona, PA	1996/04/01 - 2017/04/01	7,670	0/0	0.09%	1	2.74E+03	0.53%	2.29	7Q11

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Attachment C – Thermal Analysis for Outfall 003

Facility:	Cheswick						
Permit Number:	PA0001627						
Stream:	Allegheny River						
	WWF			WWF		WWF	PMF
	Ambient Stream	Ambient Stream	Target Maximum	Daily		Daily	
	Temperature (°F)	Temperature (°F)	Stream Temp. ¹	WLA ²		WLA ³	at Discharge
	(Default)	(Site-specific data)	(°F)	(Million BTUs/day)		(°F)	Flow (MGD)
Jan 1-31	35		40	50,643		67.9	184.6
Feb 1-29	35		40	56,545		71.7	184.6
Mar 1-31	40		46	119,683		110.0	184.6
Apr 1-15	47		52	135,151		110.0	184.6
Apr 16-30	53		58	135,151		110.0	184.6
May 1-15	58		64	97,780		104.9	250.3
May 16-31	62		72	162,967		110.0	250.3
Jun 1-15	67		80	137,749		110.0	310.8
Jun 16-30	71		84	137,749		110.0	310.8
Jul 1-31	75		87	72,702		102.1	321.2
Aug 1-15	74		87	72,868		110.0	240.3
Aug 16-31	74		87	72,868		110.0	240.3
Sep 1-15	71		84	56,434		107.7	184.6
Sep 16-30	65		78	56,434		101.7	184.6
Oct 1-15	60		72	59,724		97.0	193.6
Oct 16-31	54		66	59,724		91.0	193.6
Nov 1-15	48		58	64,430		89.9	184.6
Nov 16-30	42		50	51,544		75.5	184.6
Dec 1-31	37		42	49,347		69.1	184.6
¹ This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1°F above ambient stream temperature is allocated.							
² The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.							
³ The WLA expressed in °F is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2).							
WLAs greater than 110°F are displayed as 110°F.							

Attachment D
Water Quality Analysis

Outfalls 002, 004
Internal Monitoring Points 103, 203/303, 403, 503, 603

Outfall 002

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4Facility: **Cheswick**
Analysis Hardness (mg/L): **100**NPDES Permit No.: **PA0001627**
Discharge Flow (MGD): **12.4**Outfall: **002**
Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids	1630000	500000	Yes		Monitor
	Chloride		250000			Monitor
	Bromide	900	N/A	No		Monitor
	Sulfate	638000	250000	Yes		Monitor
	Fluoride		2000			
Group 2	Total Aluminum	< 50	750	No		
	Total Antimony	< 10	5.6	Yes	5.631	Establish Limits
	Total Arsenic	< 10	10	Yes	10.056	Establish Limits
	Total Barium	8.2	2400	No		
	Total Beryllium	< 0.5	N/A	No (Value < QL)		
	Total Boron	1030	1600	No		
	Total Cadmium	< 0.1	0.271	No (Value < QL)		
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	< 2	19	No		
	Total Copper	< 5	9.3	No		
	Total Cyanide	7	N/A	No		
	Total Iron	687	1500	No		
	Dissolved Iron	< 10	300	No (Value < QL)		
	Total Lead	< 10	3.2	Yes	3.199	Establish Limits
	Total Manganese	109	1000	No		
	Total Mercury	< 0.005	0.05	No (Value < QL)		
	Total Molybdenum	66	N/A	No		
	Total Nickel	< 5	52.2	No		
	Total Phenols (Phenolics)	< 10	5	Yes		
	Total Selenium	2.3	5.0	No		
	Total Silver	< 2	3.8	No		
	Total Thallium	< 0.1	0.24	No (Value < QL)		
	Total Zinc	9.5	119.8	No		
Group 3	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	< 0.07	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	< 0.2	4.3	No (Value < QL)		
	Carbon Tetrachloride	0.2	0.23	No		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	< 0.4	0.4	No (Value < QL)		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	< 0.2	5.7	No (Value < QL)		
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	< 0.2	5500	No (Value < QL)		
	Methylene Chloride	< 0.2	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
Group 4	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		
	2-Nitrophenol	< 4.7	1600	No (Value < QL)		
	4-Nitrophenol	< 4.7	470	No (Value < QL)		
	p-Chloro-m-Cresol	< 4.7	30	No (Value < QL)		
	Pentachlorophenol	< 0.28	0.27	No (Value < QL)		
	Phenol	< 4.7	10400	No (Value < QL)		
	2,4,6-Trichlorophenol	< 4.7	1.4	No (Value < QL)		
	Acenaphthene	< 4.7	17	No		

Group 5	Acenaphthylene	<	4.7	N/A	No		
	Anthracene	<	4.7	8300	No		
	Benidine	<	4.7	0.000086	No (Value < QL)		
	Benzo(a)Anthracene	<	4.7	0.0038	Yes	0.004	Establish Limits
	Benzo(a)Pyrene	<	4.7	0.0038	Yes	0.004	Establish Limits
	3,4-Benzofluoranthene	<	4.7	0.0038	Yes	0.004	Establish Limits
	Benzo(ghi)Perylene	<	4.7	N/A	No		
	Benzo(k)Fluoranthene	<	4.7	0.0038	Yes	0.004	Establish Limits
	Bis(2-Chloroethoxy)Methane	<	4.7	N/A	No (Value < QL)		
	Bis(2-Chloroethyl)Ether	<	4.7	0.03	No (Value < QL)		
	Bis(2-Chloroisopropyl)Ether	<	4.7	1400	No (Value < QL)		
	Bis(2-Ethylhexyl)Phthalate	<	1.9	1.2	No (Value < QL)		
	4-Bromophenyl Phenyl Ether	<	4.7	54	No (Value < QL)		
	Butyl Benzyl Phthalate	<	4.7	35	No (Value < QL)		
	2-Chloronaphthalene	<	4.7	1000	No (Value < QL)		
	4-Chlorophenyl Phenyl Ether	<	4.7	N/A	No (Value < QL)		
	Chrysene	<	4.7	0.0038	Yes	0.004	Establish Limits
	Dibenzo(a,h)Anthracene	<	4.7	0.0038	Yes	0.004	Establish Limits
	1,2-Dichlorobenzene	<	4.7	160	No		
	1,3-Dichlorobenzene	<	4.7	69	No		
	1,4-Dichlorobenzene	<	4.7	150	No		
	3,3-Dichlorobenzidine	<	4.7	0.021	No (Value < QL)		
	Diethyl Phthalate	<	4.7	800	No (Value < QL)		
	Dimethyl Phthalate	<	4.7	500	No (Value < QL)		
	Di-n-Butyl Phthalate	<	4.7	21	No (Value < QL)		
	2,4-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	2,6-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	1,4-Dioxane	<	4.7	N/A	No		
	Di-n-Octyl Phthalate	<	4.7	N/A	No (Value < QL)		
	1,2-Diphenylhydrazine	<	4.7	0.036	No (Value < QL)		
	Fluoranthene	<	4.7	40	No		
	Fluorene	<	4.7	1100	No		
	Hexachlorobenzene	<	4.7	0.00028	No (Value < QL)		
	Hexachlorobutadiene	<	4.7	0.44	Yes	0.464	Establish Limits
	Hexachlorocyclopentadiene	<	4.7	1	No (Value < QL)		
	Hexachloroethane	<	4.7	1.4	No (Value < QL)		
	Indeno(1,2,3-cd)Pyrene	<	4.7	0.0038	Yes	0.004	Establish Limits
	Isophorone	<	4.7	35	No (Value < QL)		
	Naphthalene	<	4.7	43	No		
	Nitrobenzene	<	4.7	17	No (Value < QL)		
	n-Nitrosodimethylamine	<	4.7	0.00069	No (Value < QL)		
	n-Nitrosodi-n-Propylamine	<	4.7	0.005	No (Value < QL)		
	n-Nitrosodiphenylamine	<	9.3	3.3	Yes	3.481	Establish Limits
	Phenanthrene	<	4.7	1	Yes	1.006	Establish Limits
	Pyrene	<	4.7	830	No		
	1,2,4-Trichlorobenzene	<	4.7	26	No		

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
33846	2.48	1180.00	11.10	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0.567	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Langeloth	PA0004219	0.024	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ANTIMONY	500	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	184	0	0.5	0.5	0	0	0	0	1	0
BORON	2720	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	30	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	64	0	0.5	0.5	0	0	0	0	1	0
COBALT	100	0	0.5	0.5	0	0	0	0	1	0
COPPER	100	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	500	0	0.5	0.5	0	0	0	0	1	0
FLUORIDE (PWS)	78800	0	0.5	0.5	0	0	0	0	1	0
LEAD	114	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1950	0	0.5	0.5	0	0	0	0	1	0
NICKEL	750	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	10	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	28	0	0.5	0.5	0	0	0	0	1	0
SILVER	100	0	0.5	0.5	0	0	0	0	1	0
SULFATE (PWS)	44	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42289	2.81	850.00	10.69	0.00500	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0.1069	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	D001627-MM	12.4	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
3,4-BENZOFLUORANTHENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+09	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+09	0	0.5	0.5	0	0	0	0	1	0
BENZO(a)ANTHRACENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
BENZO(a)PYRENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
BENZO(k)-FLUORANTHENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
CHRYSENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
DIBENZO(a,h) ANTHRACENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
INDENO(1,2,3-cd)PYRENE	1E+09	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+09	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+09	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+09	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42289	0.00	770.00	14.03	0.00600	0.00	<input checked="" type="checkbox"/>

Stream Data													
LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data												
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH	
		(mgd)	(mgd)	(mgd)						(mg/L)		
		0	0	0	0	0	0	0	0	100	7	

Parameter Data											
Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc	
	(µg/L)	(µg/L)			(µg/L)					(µg/L)	
3,4-BENZOFLUORANTHENE	0	0	0.5	0.5	0	0	0	0	1	0	
ANTIMONY	0	0	0.5	0.5	0	0	0	0	1	0	
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0	
BENZO(a)ANTHRACENE	0	0	0.5	0.5	0	0	0	0	1	0	
BENZO(a)PYRENE	0	0	0.5	0.5	0	0	0	0	1	0	
BENZO(k)-FLUORANTHENE	0	0	0.5	0.5	0	0	0	0	1	0	
CHRYSENE	0	0	0.5	0.5	0	0	0	0	1	0	
DIBENZO(a,h) ANTHRACENE	0	0	0.5	0.5	0	0	0	0	1	0	
HEXACHLOROBUTA-DIENE	0	0	0.5	0.5	0	0	0	0	1	0	
INDENO(1,2,3-cd)PYRENE	0	0	0.5	0.5	0	0	0	0	1	0	
LEAD	0	0	0.5	0.5	0	0	0	0	1	0	
N-NITROSODI-PHENYLAMINE	0	0	0.5	0.5	0	0	0	0	1	0	
PHENANTHRENE	0	0	0.5	0.5	0	0	0	0	1	0	

PENTOXSD Analysis Results

Hydrodynamics

<u>SWP Basin</u>		<u>Stream Code:</u>		<u>Stream Name:</u>							
18A		42289		LITTLE DEER CREEK							
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
2.810	0.1069	0	0.1069	19.1828	0.005	0.7578	38.9	51.332	0.6544	0.2624	.001
0.000	0.4409	0	0.4409	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
2.810	1.0527	0	1.0527	19.1828	0.005	0.7739	38.9	50.262	0.6721	0.2555	.116
0.000	3.632	0	3.632	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number							
2.81	Cheswick	MMDP - 002							
AFC									
Q7-10:	CCT (min)	0.001	PMF	1	Analysis pH	7	Analysis Hardness	100	
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	1100	1100	1106.13
	ARSENIC		0	0	0	0	340	340	341.895
	LEAD		Dissolved WQC. Chemical translator of 1 applied.						
			0	0	0	0	64.581	81.645	82.1
	BENZO(a)ANTHRACENE		Dissolved WQC. Chemical translator of 0.791 applied.						
			0	0	0	0	0.5	0.5	0.503
	BENZO(a)PYRENE		0	0	0	0	NA	NA	NA
	3,4-BENZOFLUORANTHENE		0	0	0	0	NA	NA	NA
	BENZO(k)-FLUORANTHENE		0	0	0	0	NA	NA	NA
	CHRYSENE		0	0	0	0	NA	NA	NA
	DIBENZO(a,h) ANTHRACENE		0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE		0	0	0	0	10	10	10.056
	INDENO(1,2,3-cd)PYRENE		0	0	0	0	NA	NA	NA
	N-NITROSODI-PHENYLAMINE		0	0	0	0	300	300	301.672
	PHENANTHRENE		0	0	0	0	5	5	5.028
CFC									
Q7-10:	CCT (min)	0.001	PMF	1	Analysis pH	7	Analysis Hardness	100	
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	220	220	221.226
	ARSENIC		0	0	0	0	150	150	150.836
	LEAD		Dissolved WQC. Chemical translator of 1 applied.						
			0	0	0	0	2.517	3.182	3.199
	BENZO(a)ANTHRACENE		Dissolved WQC. Chemical translator of 0.791 applied.						
			0	0	0	0	0.1	0.1	0.101

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
2.81	Cheswick	MMDP - 002						
	BENZO(a)PYRENE	0	0	0	0	NA	NA	NA
	3,4-BENZOFLUORANTHENE	0	0	0	0	NA	NA	NA
	BENZO(k)-FLUORANTHENE	0	0	0	0	NA	NA	NA
	CHRYSENE	0	0	0	0	NA	NA	NA
	DIBENZO(a,h) ANTHRACENE	0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE	0	0	0	0	2	2	2.011
	INDENO(1,2,3-cd)PYRENE	0	0	0	0	NA	NA	NA
	N-NITROSODI-PHENYLAMINE	0	0	0	0	59	59	59.329
	PHENANTHRENE	0	0	0	0	1	1	1.006

THH

Q7-10:	CCT (min)	0.001	PMF	1	Analysis pH	NA	Analysis Hardness	NA	
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	5.6	5.6	5.631
	ARSENIC		0	0	0	0	10	10	10.056
	LEAD		0	0	0	0	NA	NA	NA
	BENZO(a)ANTHRACENE		0	0	0	0	NA	NA	NA
	BENZO(a)PYRENE		0	0	0	0	NA	NA	NA
	3,4-BENZOFLUORANTHENE		0	0	0	0	NA	NA	NA
	BENZO(k)-FLUORANTHENE		0	0	0	0	NA	NA	NA
	CHRYSENE		0	0	0	0	NA	NA	NA
	DIBENZO(a,h) ANTHRACENE		0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE		0	0	0	0	NA	NA	NA
	INDENO(1,2,3-cd)PYRENE		0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
2.81	Cheswick	MMDP - 002						
	N-NITROSODI-PHENYLAMINE	0	0	0	0	NA	NA	NA
	PHENANTHRENE	0	0	0	0	NA	NA	NA

CRL

Qh:	CCT (min)	0.116	PMF	1				
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY	0	0	0	0	NA	NA	NA
	ARSENIC	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	BENZO(a)ANTHRACENE	0	0	0	0	0.004	0.004	0.004
	BENZO(a)PYRENE	0	0	0	0	0.004	0.004	0.004
	3,4-BENZOFUORANTHENE	0	0	0	0	0.004	0.004	0.004
	BENZO(k)-FLUORANTHENE	0	0	0	0	0.004	0.004	0.004
	CHRYSENE	0	0	0	0	0.004	0.004	0.004
	DIBENZO(a,h) ANTHRACENE	0	0	0	0	0.004	0.004	0.004
	HEXACHLOROBUTA-DIENE	0	0	0	0	0.44	0.44	0.464
	INDENO(1,2,3-cd)PYRENE	0	0	0	0	0.004	0.004	0.004
	N-NITROSODI-PHENYLAMINE	0	0	0	0	3.3	3.3	3.481
	PHENANTHRENE	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

<u>SWP Basin</u>	<u>Stream Code:</u>	<u>Stream Name:</u>			
18A	42289	LITTLE DEER CREEK			
RMI	Name	Permit Number	Disc Flow (mgd)		
2.81	Cheswick	MMDP - 002	12.4000		
Parameter	Effluent Limit	Governing Criterion	Max. Daily Limit	Most Stringent	
	(µg/L)		(µg/L)	WQBEL (µg/L)	WQBEL Criterion
3,4-BENZOFLUORANTHENE	0.004	CRL	0.006	0.004	CRL
ANTIMONY	5.631	THH	8.786	5.631	THH
ARSENIC	10.056	THH	15.689	10.056	THH
BENZO(a)ANTHRACENE	0.004	CRL	0.006	0.004	CRL
BENZO(a)PYRENE	0.004	CRL	0.006	0.004	CRL
BENZO(k)-FLUORANTHENE	0.004	CRL	0.006	0.004	CRL
CHRYSENE	0.004	CRL	0.006	0.004	CRL
DIBENZO(a,h) ANTHRACENE	0.004	CRL	0.006	0.004	CRL
HEXACHLOROBUTA-DIENE	0.464	CRL	0.724	0.464	CRL
INDENO(1,2,3-cd)PYRENE	0.004	CRL	0.006	0.004	CRL
LEAD	3.199	CFC	4.991	3.199	CFC
N-NITROSODI-PHENYLAMINE	3.481	CRL	5.431	3.481	CRL
PHENANTHRENE	1.006	CFC	1.569	1.006	CFC

Internal Monitoring Point 103

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4Facility: **Cheswick**
Analysis Hardness (mg/L): **87**NPDES Permit No.: **PA0001627**
Discharge Flow (MGD): **0.4**Outfall: **103**
Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		500000			
	Chloride		250000			
	Bromide	< 100	N/A	No (Value < QL)		
	Fluoride		2000			
Group 2	Total Aluminum	< 50	750	No		
	Total Antimony	< 10	5.6	Yes	2504.24	No Limits/Monitoring
	Total Arsenic	< 10	10	Yes	4471.86	No Limits/Monitoring
	Total Barium	< 5	2400	No		
	Total Beryllium	< 0.5	N/A	No (Value < QL)		
	Total Boron	< 10	1600	No (Value < QL)		
	Total Cadmium	< 1	0.244	Yes	55.22	No Limits/Monitoring
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	< 2	19	No		
	Total Copper	< 5	8.3	No		
	Total Cyanide	< 5	N/A	No (Value < QL)		
	Total Iron	< 71.8	1500	No		
	Dissolved Iron	< 10	300	No (Value < QL)		
	Total Lead	< 10	2.7	Yes	1194.67	No Limits/Monitoring
	Total Manganese	< 3.2	1000	No		
	Total Mercury	< 0.1	0.05	No (Value < QL)		
	Total Molybdenum	< 10	N/A	No		
	Total Nickel	< 5	46.4	No		
	Total Phenols (Phenolics)	< 10	5	Yes	22435.51	No Limits/Monitoring
	Total Selenium	< 10	5.0	Yes	2231.08	No Limits/Monitoring
Group 3	Total Silver	< 2	3.0	No		
	Total Thallium	< 10	0.24	Yes	107.325	No Limits/Monitoring
	Total Zinc	< 4	106.5	No (Value < QL)		
	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	< 0.5	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	< 0.2	4.3	No (Value < QL)		
	Carbon Tetrachloride	< 0.2	0.23	No (Value < QL)		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	< 0.4	0.4	No (Value < QL)		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	< 0.2	5.7	No (Value < QL)		
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	< 0.2	5500	No (Value < QL)		
	Methylene Chloride	< 0.2	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
Group 4	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		
	2-Nitrophenol	< 4.7	1600	No (Value < QL)		
	4-Nitrophenol	< 4.7	470	No (Value < QL)		
	p-Chloro-m-Cresol	< 4.7	30	No (Value < QL)		
	Pentachlorophenol	< 4.7	0.27	No (Value < QL)		
	Phenol	< 4.7	10400	No (Value < QL)		
	2,4,6-Trichlorophenol	< 4.7	1.4	No (Value < QL)		
	Acenaphthene	< 4.7	17	No		

Group 5	Acenaphthylene	<	4.7	N/A	No		
	Anthracene	<	4.7	8300	No		
	Benzo(a)Anthracene	<	4.7	0.000086	No (Value < QL)		
	Benzo(a)Pyrene	<	0.2	0.0038	No (Value < QL)		
	3,4-Benzofluoranthene	<	0.1	0.0038	No (Value < QL)		
	Benzo(ghi)Perylene	<	0.2	0.0038	No (Value < QL)		
	Benzo(k)Fluoranthene	<	4.7	N/A	No		
	Bis(2-Chloroethoxy)Methane	<	0.2	0.0038	No (Value < QL)		
	Bis(2-Chloroethyl)Ether	<	4.7	N/A	No (Value < QL)		
	Bis(2-Chloroisopropyl)Ether	<	4.7	0.03	No (Value < QL)		
	Bis(2-Ethylhexyl)Phthalate	<	4.7	1400	No (Value < QL)		
	4-Bromophenyl Phenyl Ether		12	1.2	Yes	1467.13	No Limits/Monitoring
	Butyl Benzyl Phthalate	<	4.7	54	No (Value < QL)		
	2-Chloronaphthalene	<	4.7	35	No (Value < QL)		
	4-Chlorophenyl Phenyl Ether	<	4.7	1000	No (Value < QL)		
	Chrysene	<	4.7	N/A	No (Value < QL)		
	Dibenzo(a,h)Anthracene	<	0.2	0.0038	No (Value < QL)		
	1,2-Dichlorobenzene	<	0.2	0.0038	No (Value < QL)		
	1,3-Dichlorobenzene	<	4.7	160	No		
	1,4-Dichlorobenzene	<	4.7	69	No		
	3,3-Dichlorobenzidine	<	4.7	150	No		
	Diethyl Phthalate	<	4.7	0.021	No (Value < QL)		
	Dimethyl Phthalate	<	4.7	800	No (Value < QL)		
	Di-n-Butyl Phthalate	<	4.7	500	No (Value < QL)		
	2,4-Dinitrotoluene	<	4.7	21	No (Value < QL)		
	2,6-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	1,4-Dioxane	<	4.7	0.05	No (Value < QL)		
	Di-n-Octyl Phthalate	<	4.7	N/A	No		
	1,2-Diphenylhydrazine	<	4.7	N/A	No (Value < QL)		
	Fluoranthene	<	4.7	0.036	No (Value < QL)		
	Fluorene	<	4.7	40	No		
	Hexachlorobenzene	<	4.7	1100	No		
	Hexachlorobutadiene	<	4.7	0.00028	No (Value < QL)		
	Hexachlorocyclopentadiene	<	4.7	0.44	Yes	292.39	No Limits/Monitoring
	Hexachloroethane	<	4.7	1	No (Value < QL)		
	Indeno(1,2,3-cd)Pyrene	<	4.7	1.4	No (Value < QL)		
	Isophorone	<	0.2	0.0038	No (Value < QL)		
	Naphthalene	<	4.7	35	No (Value < QL)		
	Nitrobenzene	<	4.7	43	No		
	n-Nitrosodimethylamine	<	4.7	17	No (Value < QL)		
	n-Nitrosodi-n-Propylamine	<	4.7	0.00069	No (Value < QL)		
	n-Nitrosodiphenylamine	<	4.7	0.005	No (Value < QL)		
	Phenanthrene	<	9.3	3.3	Yes	4034.59	No Limits/Monitoring
	Pyrene	<	4.7	1	Yes	149.2	No Limits/Monitoring
	1,2,4-Trichlorobenzene	<	4.7	830	No		
		<	4.7	26	No		

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	15.75	734.80	11500.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	2761	0	0	870	7	0	0	87	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	103	0.4	0	0	0	0.01	0.1	0.1	0.1	165	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Stream Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ALUMINUM	1E+10	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+11	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+11	0	0.5	0.5	0	0	0	0	1	0
BARIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
BIS(2-ETHYLHEXYL) PHTHALATE	1E+08	0	0.5	0.5	0	0	0	0	1	0
BORON	1E+11	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHLOROFORM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	1E+11	0	0.5	0.5	0	0	0	0	1	0
COBALT	1E+11	0	0.5	0.5	0	0	0	0	1	0
COPPER	1E+11	0	0.5	0.5	0	0	0	0	1	0
CYANIDE, FREE	1E+11	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1000000	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+11	0	0.5	0.5	0	0	0	0	1	0
LITHIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+11	0	0.5	0.5	0	0	0	0	1	0
MERCURY	1E+11	0	0.5	0.5	0	0	0	0	1	0
NICKEL	1E+11	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1E+07	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
SILVER	1E+11	0	0.5	0.5	0	0	0	0	1	0
THALLIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+11	0	0.5	0.5	0	0	0	0	1	0

Monday, December 18, 2017

Page 1 of 2

ZINC			1E+11	0	0.5	0.5	0	0	0	0	0	1	0	
Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)				Apply FC					
42122	15.00	734.00	11550.00	0.00000	0.00				<input checked="" type="checkbox"/>					
Stream Data														
	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0	0	0	0	0	0	0	87	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0
Discharge Data														
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH			
		(mgd)	(mgd)	(mgd)										
		0	0	0	0	0	0	0	0	100	7			
Parameter Data														
Parameter Name		Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc			
		(µg/L)	(µg/L)			(µg/L)					(µg/L)			
ALUMINUM		0	0	0.5	0.5	0	0	0	0	1	0			
ANTIMONY		0	0	0.5	0.5	0	0	0	0	1	0			
ARSENIC		0	0	0.5	0.5	0	0	0	0	1	0			
BARIUM		0	0	0.5	0.5	0	0	0	0	1	0			
BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0.5	0.5	0	0	0	0	1	0			
BORON		0	0	0.5	0.5	0	0	0	0	1	0			
CADMIUM		0	0	0.5	0.5	0	0	0	0	1	0			
CHLOROFORM		0	0	0.5	0.5	0	0	0	0	1	0			
CHROMIUM, VI		0	0	0.5	0.5	0	0	0	0	1	0			
COBALT		0	0	0.5	0.5	0	0	0	0	1	0			
COPPER		0	0	0.5	0.5	0	0	0	0	1	0			
CYANIDE, FREE		0	0	0.5	0.5	0	0	0	0	1	0			
DISSOLVED IRON		0	0	0.5	0.5	0	0	0	0	1	0			
HEXACHLOROBUTA-DIENE		0	0	0.5	0.5	0	0	0	0	1	0			
LEAD		0	0	0.5	0.5	0	0	0	0	1	0			
LITHIUM		0	0	0.5	0.5	0	0	0	0	1	0			
MANGANESE		0	0	0.5	0.5	0	0	0	0	1	0			
MERCURY		0	0	0.5	0.5	0	0	0	0	1	0			
NICKEL		0	0	0.5	0.5	0	0	0	0	1	0			
N-NITROSODI-PHENYLAMINE		0	0	0.5	0.5	0	0	0	0	1	0			
PHENANTHRENE		0	0	0.5	0.5	0	0	0	0	1	0			
PHENOLICS (PWS)		0	0	0.5	0.5	0	0	0	0	1	0			
SELENIUM		0	0	0.5	0.5	0	0	0	0	1	0			
SILVER		0	0	0.5	0.5	0	0	0	0	1	0			
THALLIUM		0	0	0.5	0.5	0	0	0	0	1	0			
TOTAL IRON		0	0	0.5	0.5	0	0	0	0	1	0			
ZINC		0	0	0.5	0.5	0	0	0	0	1	0			

PENTOXSD Analysis Results

Hydrodynamics

<u>SWP Basin</u>		<u>Stream Code:</u>				<u>Stream Name:</u>					
18A		42122				ALLEGHENY RIVER					
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)

Q7-10 Hydrodynamics

15.750	2761	0	2761	0.61879	0.0002	7	870	124.29	0.4535	0.1011	1000+
15.000	2766	0	2766	NA	0	0	0	0	0	0	NA

Qh Hydrodynamics

15.750	7559.3	0	7559.3	0.61879	0.0002	10.903	870	79.797	0.7970	0.0575	1000+
15.000	7571.3	0	7571.3	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	103						
AFC								
Q7-10:	CCT (min)	15	PMF	0.009	Analysis pH	7	Analysis Hardness	88.709
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	ANTIMONY		0	0	0	0	1100	1100
	ARSENIC		0	0	0	0	340	340
	CADMIUM		0	0	0	0	1.792	1.889
	LEAD		0	0	0	0	56.67	70.097
	SELENIUM		0	0	0	0	NA	NA
	THALLIUM		0	0	0	0	65	65
BIS(2-ETHYLHEXYL) PHTHALATE			0	0	0	0	4500	4500
HEXACHLOROBUTA-DIENE			0	0	0	0	10	10
N-NITROSODI-PHENYLAMINE			0	0	0	0	300	300
PHENANTHRENE			0	0	0	0	5	5
MANGANESE			0	0	0	0	NA	NA
CFC								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	7	Analysis Hardness	87.174
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	ANTIMONY		0	0	0	0	220	220
	ARSENIC		0	0	0	0	150	150
	CADMIUM		0	0	0	0	0.224	0.244
	LEAD		0	0	0	0	2.167	2.672
	SELENIUM		0	0	0	0	4.6	4.989
	THALLIUM		0	0	0	0	13	13

Monday, December 18, 2017

Page 1 of 3

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number							
15.75	Cheswick	103							
BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	910	910	406939.4		
HEXACHLOROBUTA-DIENE	0	0	0	0	2	2	894.372		
N-NITROSODI-PHENYLAMINE	0	0	0	0	59	59	26383.98		
PHENANTHRENE	0	0	0	0	1	1	447.186		
MANGANESE	0	0	0	0	NA	NA	NA		

THH

Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	NA	Analysis Hardness	NA	
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	5.6	5.6	2504.243
	ARSENIC		0	0	0	0	10	10	4471.862
	CADMIUM		0	0	0	0	NA	NA	NA
	LEAD		0	0	0	0	NA	NA	NA
	SELENIUM		0	0	0	0	NA	NA	NA
	THALLIUM		0	0	0	0	0.24	0.24	107.325
	BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE		0	0	0	0	NA	NA	NA
	N-NITROSODI-PHENYLAMINE		0	0	0	0	NA	NA	NA
	PHENANTHRENE		0	0	0	0	NA	NA	NA
	MANGANESE		0	0	0	0	1000	1000	447186.2

CRL

Qh:	CCT (min)	720	PMF	0.1					
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	103						
	ARSENIC	0	0	0	0	0	NA	NA
	CADMIUM	0	0	0	0	0	NA	NA
	LEAD	0	0	0	0	0	NA	NA
	SELENIUM	0	0	0	0	0	NA	NA
	THALLIUM	0	0	0	0	0	NA	NA
	BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	0	1.2	1.2 1467.125
	HEXACHLOROBUTA-DIENE	0	0	0	0	0	0.44	0.44 537.946
	N-NITROSODI-PHENYLAMINE	0	0	0	0	0	3.3	3.3 4034.594
	PHENANTHRENE	0	0	0	0	0	NA	NA
	MANGANESE	0	0	0	0	0	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

<u>SWP Basin</u>	<u>Stream Code:</u>	<u>Stream Name:</u>			
18A	42122	ALLEGHENY RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)		
15.75	Cheswick	103	0.4000		
Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
ANTIMONY	2504.243	THH	3907.021	2504.243	THH
ARSENIC	4471.862	THH	6976.823	4471.862	THH
BIS(2-ETHYLHEXYL) PHTHALATE	1467.125	CRL	2288.951	1467.125	CRL
CADMIUM	55.222	AFC	86.155	55.222	AFC
HEXACHLOROBUTA-DIENE	292.397	AFC	456.186	292.397	AFC
LEAD	1194.671	CFC	1863.878	1194.671	CFC
MANGANESE	447186.2	THH	697682.3	447186.2	THH
N-NITROSODI-PHENYLAMINE	4034.594	CRL	6294.616	4034.594	CRL
PHENANTHRENE	146.198	AFC	228.093	146.198	AFC
SELENIUM	2231.081	CFC	3480.845	2231.081	CFC
THALLIUM	107.325	THH	167.444	107.325	THH

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Internal Monitoring Point 203/303

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4

Facility: **Cheswick**
 Analysis Hardness (mg/L): **87**

NPDES Permit No.: **PA0001627**
 Discharge Flow (MGD):

Outfall: **303**
 Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids	180000	500000	No		
	Chloride		250000			
	Bromide	100	N/A	No		
	Sulfate	55000	250000	No		
	Fluoride		2000			
Group 2	Total Aluminum	636	750	No		
	Total Antimony	< 10	5.6	Yes	838.48	No Limits/Monitoring
	Total Arsenic	< 10	10	Yes	1497.29	No Limits/Monitoring
	Total Barium	47.4	2400	No		
	Total Beryllium	< 0.5	N/A	No (Value < QL)		
	Total Boron	133	1600	No		
	Total Cadmium	< 1	0.244	Yes	19.92	No Limits/Monitoring
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	< 2	19	No		
	Total Copper	< 5	8.3	No		
	Total Cyanide	< 5	N/A	No (Value < QL)		
	Total Iron	1000	1500	No		
	Dissolved Iron	28	300	No		
	Total Lead	< 10	2.7	Yes	402.03	No Limits/Monitoring
	Total Manganese	247	1000	No		
	Total Mercury	< 0.1	0.05	No (Value < QL)		
	Total Molybdenum	< 10	N/A	No		
	Total Nickel	< 5	46.4	No		
	Total Phenols (Phenolics)	< 10	5	Yes	747.02	No Limits/Monitoring
	Total Selenium	< 10	5.0	Yes		
	Total Silver	< 2	3.0	No		
	Total Thallium	< 10	0.24	Yes	35.93	Monitor
	Total Zinc	10	106.5	No		
Group 3	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	<	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	< 0.2	4.3	No (Value < QL)		
	Carbon Tetrachloride	< 0.2	0.23	No (Value < QL)		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	< 0.4	0.4	No (Value < QL)		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	< 0.2	5.7	No (Value < QL)		
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	< 0.2	5500	No (Value < QL)		
	Methylene Chloride	< 0.2	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
Group 4	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		
	2-Nitrophenol	< 4.7	1600	No (Value < QL)		
	4-Nitrophenol	< 4.7	470	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

p-Chloro-m-Cresol	<	4.7	30	No (Value < QL)		
Pentachlorophenol	<	4.7	0.27	No (Value < QL)		
Phenol	<	4.7	10400	No (Value < QL)		
2,4,6-Trichlorophenol	<	4.7	1.4	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	15.75	734.80	11500.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	2761	0	0	870	7	0	0	87	7	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	103	0.4	0	0	0	0.01	0.1	0.1	0.1	165	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ALUMINUM	1E+10	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+11	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+11	0	0.5	0.5	0	0	0	0	1	0
BARIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
BIS(2-ETHYLHEXYL) PHTHALATE	1E+08	0	0.5	0.5	0	0	0	0	1	0
BORON	1E+11	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHLOROFORM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	1E+11	0	0.5	0.5	0	0	0	0	1	0
COBALT	1E+11	0	0.5	0.5	0	0	0	0	1	0
COPPER	1E+11	0	0.5	0.5	0	0	0	0	1	0
CYANIDE, FREE	1E+11	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1000000	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+11	0	0.5	0.5	0	0	0	0	1	0
LITHIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+11	0	0.5	0.5	0	0	0	0	1	0
MERCURY	1E+11	0	0.5	0.5	0	0	0	0	1	0
NICKEL	1E+11	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1E+07	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
SILVER	1E+11	0	0.5	0.5	0	0	0	0	1	0
THALLIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+11	0	0.5	0.5	0	0	0	0	1	0

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

ZINC				1E+11	0	0.5	0	0	0	0	1	0	
Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)				Apply FC				
42122	15.00	734.00	11550.00	0.00000	0.00				<input checked="" type="checkbox"/>				
Stream Data													
LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0	0	0	0	0	0	87	7	0	0	0	0
Qh		0	0	0	0	0	0	100	7	0	0	0	0
Discharge Data													
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH		
		(mgd)	(mgd)	(mgd)						(mg/L)			
		0	0	0	0	0	0	0	0	100	7		
Parameter Data													
Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc			
	(µg/L)	(µg/L)			(µg/L)					(µg/L)			
ALUMINUM	0	0	0.5	0.5	0	0	0	0	1	0			
ANTIMONY	0	0	0.5	0.5	0	0	0	0	1	0			
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0			
BARIUM	0	0	0.5	0.5	0	0	0	0	1	0			
BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0.5	0.5	0	0	0	0	1	0			
BORON	0	0	0.5	0.5	0	0	0	0	1	0			
CADMIUM	0	0	0.5	0.5	0	0	0	0	1	0			
CHLOROFORM	0	0	0.5	0.5	0	0	0	0	1	0			
CHROMIUM, VI	0	0	0.5	0.5	0	0	0	0	1	0			
COBALT	0	0	0.5	0.5	0	0	0	0	1	0			
COPPER	0	0	0.5	0.5	0	0	0	0	1	0			
CYANIDE, FREE	0	0	0.5	0.5	0	0	0	0	1	0			
DISSOLVED IRON	0	0	0.5	0.5	0	0	0	0	1	0			
HEXACHLOROBUTA-DIENE	0	0	0.5	0.5	0	0	0	0	1	0			
LEAD	0	0	0.5	0.5	0	0	0	0	1	0			
LITHIUM	0	0	0.5	0.5	0	0	0	0	1	0			
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0			
MERCURY	0	0	0.5	0.5	0	0	0	0	1	0			
NICKEL	0	0	0.5	0.5	0	0	0	0	1	0			
N-NITROSODI-PHENYLAMINE	0	0	0.5	0.5	0	0	0	0	1	0			
PHENANTHRENE	0	0	0.5	0.5	0	0	0	0	1	0			
PHENOLICS (PWS)	0	0	0.5	0.5	0	0	0	0	1	0			
SELENIUM	0	0	0.5	0.5	0	0	0	0	1	0			
SILVER	0	0	0.5	0.5	0	0	0	0	1	0			
THALLIUM	0	0	0.5	0.5	0	0	0	0	1	0			
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0			
ZINC	0	0	0.5	0.5	0	0	0	0	1	0			

Monday, December 18, 2017

Page 2 of 2

PENTOXSD Analysis Results**Hydrodynamics**

<u>SWP Basin</u>		<u>Stream Code:</u>		<u>Stream Name:</u>								
18A		42122		ALLEGHENY RIVER								
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)	
Q7-10 Hydrodynamics												
15.750	2761	0	2761	0.61879	0.0002	7	870	124.29	0.4535	0.1011	1000+	
15.000	2766	0	2766	NA	0	0	0	0	0	0	NA	
Qh Hydrodynamics												
15.750	7559.3	0	7559.3	0.61879	0.0002	10.903	870	79.797	0.7970	0.0575	1000+	
15.000	7571.3	0	7571.3	NA	0	0	0	0	0	0	NA	

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number							
15.75	Cheswick	103							
AFC									
Q7-10:	CCT (min)	15	PMF	0.009	Analysis pH	7	Analysis Hardness	88.709	
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	1100	1100	50180.48
	ARSENIC		0	0	0	0	340	340	15510.33
			Dissolved WQC. Chemical translator of 1 applied.						
	CADMIUM		0	0	0	0	1.792	1.889	86.155
			Dissolved WQC. Chemical translator of 0.949 applied.						
	LEAD		0	0	0	0	56.67	70.097	3197.718
			Dissolved WQC. Chemical translator of 0.808 applied.						
	SELENIUM		0	0	0	0	NA	NA	NA
	THALLIUM		0	0	0	0	65	65	2965.21
BIS(2-ETHYLHEXYL) PHTHALATE			0	0	0	0	4500	4500	205283.8
HEXACHLOROBUTA-DIENE			0	0	0	0	10	10	456.186
N-NITROSODI-PHENYLAMINE			0	0	0	0	300	300	13685.58
PHENANTHRENE			0	0	0	0	5	5	228.093
MANGANESE			0	0	0	0	NA	NA	NA
CFC									
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	7	Analysis Hardness	87.174	
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	220	220	98380.96
	ARSENIC		0	0	0	0	150	150	67077.93
			Dissolved WQC. Chemical translator of 1 applied.						
	CADMIUM		0	0	0	0	0.224	0.244	109.317
			Dissolved WQC. Chemical translator of 0.915 applied.						
	LEAD		0	0	0	0	2.167	2.672	1194.671
			Dissolved WQC. Chemical translator of 0.811 applied.						
	SELENIUM		0	0	0	0	4.6	4.989	2231.081
			Dissolved WQC. Chemical translator of 0.922 applied.						
	THALLIUM		0	0	0	0	13	13	5813.42

PENTOXSD Analysis Results**Wasteload Allocations**

RMI	Name	Permit Number						
15.75	Cheswick	103						
BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	910	910	406939.4	
HEXACHLOROBUTA-DIENE	0	0	0	0	2	2	894.372	
N-NITROSODI-PHENYLAMINE	0	0	0	0	59	59	26383.98	
PHENANTHRENE	0	0	0	0	1	1	447.186	
MANGANESE	0	0	0	0	NA	NA	NA	

THH

Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	NA	Analysis Hardness	NA
Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ANTIMONY		0	0	0	0	5.6	5.6	2504.243
ARSENIC		0	0	0	0	10	10	4471.862
CADMIUM		0	0	0	0	NA	NA	NA
LEAD		0	0	0	0	NA	NA	NA
SELENIUM		0	0	0	0	NA	NA	NA
THALLIUM		0	0	0	0	0.24	0.24	107.325
BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0	0	NA	NA	NA
HEXACHLOROBUTA-DIENE		0	0	0	0	NA	NA	NA
N-NITROSODI-PHENYLAMINE		0	0	0	0	NA	NA	NA
PHENANTHRENE		0	0	0	0	NA	NA	NA
MANGANESE		0	0	0	0	1000	1000	447186.2

CRL

Qh:	CCT (min)	720	PMF	0.1				
Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ANTIMONY		0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results**Wasteload Allocations**

RMI	Name	Permit Number						
15.75	Cheswick	103						
	ARSENIC	0	0	0	0	0	NA	NA
	CADMIUM	0	0	0	0	0	NA	NA
	LEAD	0	0	0	0	0	NA	NA
	SELENIUM	0	0	0	0	0	NA	NA
	THALLIUM	0	0	0	0	0	NA	NA
	BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	0	1.2	1.2
	HEXACHLOROBUTA-DIENE	0	0	0	0	0	0.44	0.44
	N-NITROSODI-PHENYLAMINE	0	0	0	0	0	3.3	3.3
	PHENANTHRENE	0	0	0	0	0	NA	NA
	MANGANESE	0	0	0	0	0	NA	NA

PENTOXSD Analysis Results**Recommended Effluent Limitations**

<u>SWP Basin</u>	<u>Stream Code:</u>	<u>Stream Name:</u>			
18A	42122	ALLEGHENY RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)		
15.75	Cheswick	103	0.4000		
Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
ANTIMONY	2504.243	THH	3907.021	2504.243	THH
ARSENIC	4471.862	THH	6976.823	4471.862	THH
BIS(2-ETHYLHEXYL) PHTHALATE	1467.125	CRL	2288.951	1467.125	CRL
CADMIUM	55.222	AFC	86.155	55.222	AFC
HEXACHLOROBUTA-DIENE	292.397	AFC	456.186	292.397	AFC
LEAD	1194.671	CFC	1863.878	1194.671	CFC
MANGANESE	447186.2	THH	697682.3	447186.2	THH
N-NITROSODI-PHENYLAMINE	4034.594	CRL	6294.616	4034.594	CRL
PHENANTHRENE	146.198	AFC	228.093	146.198	AFC
SELENIUM	2231.081	CFC	3480.845	2231.081	CFC
THALLIUM	107.325	THH	167.444	107.325	THH

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Internal Monitoring Point 403

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4

Facility: **Cheswick**
 Analysis Hardness (mg/L): **87**

NPDES Permit No.: **PA0001627**
 Discharge Flow (MGD): **1.23**

Outfall: **403**
 Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids	450000	500000	No		
	Chloride		250000			
	Bromide	< 100000	N/A	No		Monitor
	Sulfate	234000	250000	No		
	Fluoride		2000			
Group 2	Total Aluminum	182	750	No		
	Total Antimony	< 10	5.6	Yes	818.17	No Limits/Monitoring
	Total Arsenic	< 10	10	Yes	1461.01	No Limits/Monitoring
	Total Barium	36.5	2400	No		
	Total Beryllium	< 0.5	N/A	No (Value < QL)		
	Total Boron	63.1	1600	No		
	Total Cadmium	< 1	0.244	Yes	19.49	No Limits/Monitoring
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	9.1	19	No		
	Total Copper	< 5	8.3	No		
	Total Cyanide	< 5	N/A	No (Value < QL)		
	Total Iron	1240	1500	No		
	Dissolved Iron	< 10	300	No (Value < QL)		
	Total Lead	< 10	2.7	Yes	392.36	No Limits/Monitoring
	Total Manganese	709	1000	No		
	Total Mercury	< 0.1	0.05	No (Value < QL)		
	Total Molybdenum	< 10	N/A	No		
	Total Nickel	23.2	46.4	No		
	Total Phenols (Phenolics)	< 10	5	Yes	7299.47	No Limits/Monitoring
	Total Selenium	< 10	5.0	Yes	728.92	No Limits/Monitoring
	Total Silver	< 2	3.0	No		
	Total Thallium	< 0.3	0.24	No (Value < QL)		
	Total Zinc	67.5	106.5	No		
Group 3	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	< 0.07	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	0.2	4.3	No		
	Carbon Tetrachloride	< 0.2	0.23	No (Value < QL)		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	0.4	0.4	Yes		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	0.3	5.7	No		
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	0.3	5500	No		
	Methylene Chloride	< 0.2	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
Group 4	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

	2-Nitrophenol	<	4.7	1600	No (Value < QL)		
	4-Nitrophenol	<	4.7	470	No (Value < QL)		
	p-Chloro-m-Cresol	<	4.7	30	No (Value < QL)		
	Pentachlorophenol	<	4.7	0.27	No (Value < QL)		
	Phenol	<	4.7	10400	No (Value < QL)		
	2,4,6-Trichlorophenol	<	4.7	1.4	No (Value < QL)		
	Acenaphthene	<	4.7	17	No		
Group 5	Acenaphthylene	<	4.7	N/A	No		
	Anthracene	<	4.7	8300	No		
	Benzidine	<	4.7	0.000086	No (Value < QL)		
	Benzo(a)Anthracene	<	0.2	0.0038	No (Value < QL)		
	Benzo(a)Pyrene	<	0.1	0.0038	No (Value < QL)		
	3,4-Benzofluoranthene	<	0.2	0.0038	No (Value < QL)		
	Benzo(ghi)Perylene	<	4.7	N/A	No		
	Benzo(k)Fluoranthene	<	0.2	0.0038	No (Value < QL)		
	Bis(2-Chloroethoxy)Methane	<	4.7	N/A	No (Value < QL)		
	Bis(2-Chloroethyl)Ether	<	4.7	0.03	No (Value < QL)		
	Bis(2-Chloroisopropyl)Ether	<	4.7	1400	No (Value < QL)		
	Bis(2-Ethylhexyl)Phthalate	<	81	1.2	Yes	477.17	Monitor
	4-Bromophenyl Phenyl Ether	<	4.7	54	No (Value < QL)		
	Butyl Benzyl Phthalate	<	4.7	35	No (Value < QL)		
	2-Chloronaphthalene	<	4.7	1000	No (Value < QL)		
	4-Chlorophenyl Phenyl Ether	<	4.7	N/A	No (Value < QL)		
	Chrysene	<	0.2	0.0038	No (Value < QL)		
	Dibenzo(a,h)Anthracene	<	0.2	0.0038	No (Value < QL)		
	1,2-Dichlorobenzene	<	4.7	160	No		
	1,3-Dichlorobenzene	<	4.7	69	No		
	1,4-Dichlorobenzene	<	4.7	150	No		
	3,3-Dichlorobenzidine	<	4.7	0.021	No (Value < QL)		
	Diethyl Phthalate	<	4.7	800	No (Value < QL)		
	Dimethyl Phthalate	<	4.7	500	No (Value < QL)		
	Di-n-Butyl Phthalate	<	4.7	21	No (Value < QL)		
	2,4-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	2,6-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	1,4-Dioxane	<	4.7	N/A	No		
	Di-n-Octyl Phthalate	<	4.7	N/A	No (Value < QL)		
	1,2-Diphenylhydrazine	<	4.7	0.036	No (Value < QL)		
	Fluoranthene	<	4.7	40	No		
	Fluorene	<	4.7	1100	No		
	Hexachlorobenzene	<	4.7	0.00028	No (Value < QL)		
	Hexachlorobutadiene	<	4.7	0.44	Yes	99.41	No Limits/Monitoring
	Hexachlorocyclopentadiene	<	4.7	1	No (Value < QL)		
	Hexachloroethane	<	4.7	1.4	No (Value < QL)		
	Indeno(1,2,3-cd)Pyrene	<	0.2	0.0038	No (Value < QL)		
	Isophorone	<	4.7	35	No (Value < QL)		
	Naphthalene	<	4.7	43	No		
	Nitrobenzene	<	4.7	17	No (Value < QL)		
	n-Nitrosodimethylamine	<	4.7	0.00069	No (Value < QL)		
	n-Nitrosodi-n-Propylamine	<	4.7	0.005	No (Value < QL)		
	n-Nitrosodiphenylamine	<	4.7	3.3	No (Value < QL)		
	Phenanthrene	<	4.7	1	Yes	49.7	No Limits/Monitoring
	Pyrene	<	4.7	830	No		
	1,2,4-Trichlorobenzene	<	4.7	26	No		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	15.75	734.80	11500.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	2761	0	0	870	7	0	0	87	7	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	IMP 403	1.23	0	0	0	0.01	0.1	0.1	0.1	165	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ALUMINUM	1E+10	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+11	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+11	0	0.5	0.5	0	0	0	0	1	0
BARIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
BIS(2-ETHYLHEXYL) PHTHALATE	1E+08	0	0.5	0.5	0	0	0	0	1	0
BORON	1E+11	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHLOROFORM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	1E+11	0	0.5	0.5	0	0	0	0	1	0
COBALT	1E+11	0	0.5	0.5	0	0	0	0	1	0
COPPER	1E+11	0	0.5	0.5	0	0	0	0	1	0
CYANIDE, FREE	1E+11	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1000000	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+11	0	0.5	0.5	0	0	0	0	1	0
LITHIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+11	0	0.5	0.5	0	0	0	0	1	0
MERCURY	1E+11	0	0.5	0.5	0	0	0	0	1	0
NICKEL	1E+11	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1E+07	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
SILVER	1E+11	0	0.5	0.5	0	0	0	0	1	0
THALLIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+11	0	0.5	0.5	0	0	0	0	1	0

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

ZINC												1E+11	0	0.5	0.5	0	0	0	0	1	0
Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)					Apply FC											
42122	15.00	734.00	11550.00	0.00000	0.00					<input checked="" type="checkbox"/>											
Stream Data																					
LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary		Stream		Analysis									
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	Hard	pH	Hard	pH	Hard	pH								
Q7-10	0.1	0	0	0	0	0	0	87	7	0	0	0	0								
Qh		0	0	0	0	0	0	100	7	0	0	0	0								
Discharge Data																					
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH										
		(mgd)	(mgd)	(mgd)						(mg/L)											
		0	0	0	0	0	0	0	0	100	7										
Parameter Data																					
Parameter Name		Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc										
		(µg/L)	(µg/L)			(µg/L)					(µg/L)										
ALUMINUM		0	0	0.5	0.5	0	0	0	0	1	0										
ANTIMONY		0	0	0.5	0.5	0	0	0	0	1	0										
ARSENIC		0	0	0.5	0.5	0	0	0	0	1	0										
BARIUM		0	0	0.5	0.5	0	0	0	0	1	0										
BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0.5	0.5	0	0	0	0	1	0										
BORON		0	0	0.5	0.5	0	0	0	0	1	0										
CADMIUM		0	0	0.5	0.5	0	0	0	0	1	0										
CHLOROFORM		0	0	0.5	0.5	0	0	0	0	1	0										
CHROMIUM, VI		0	0	0.5	0.5	0	0	0	0	1	0										
COBALT		0	0	0.5	0.5	0	0	0	0	1	0										
COPPER		0	0	0.5	0.5	0	0	0	0	1	0										
CYANIDE, FREE		0	0	0.5	0.5	0	0	0	0	1	0										
DISSOLVED IRON		0	0	0.5	0.5	0	0	0	0	1	0										
HEXACHLOROBUTA-DIENE		0	0	0.5	0.5	0	0	0	0	1	0										
LEAD		0	0	0.5	0.5	0	0	0	0	1	0										
LITHIUM		0	0	0.5	0.5	0	0	0	0	1	0										
MANGANESE		0	0	0.5	0.5	0	0	0	0	1	0										
MERCURY		0	0	0.5	0.5	0	0	0	0	1	0										
NICKEL		0	0	0.5	0.5	0	0	0	0	1	0										
N-NITROSODI-PHENYLAMINE		0	0	0.5	0.5	0	0	0	0	1	0										
PHENANTHRENE		0	0	0.5	0.5	0	0	0	0	1	0										
PHENOLICS (PWS)		0	0	0.5	0.5	0	0	0	0	1	0										
SELENIUM		0	0	0.5	0.5	0	0	0	0	1	0										
SILVER		0	0	0.5	0.5	0	0	0	0	1	0										
THALLIUM		0	0	0.5	0.5	0	0	0	0	1	0										
TOTAL IRON		0	0	0.5	0.5	0	0	0	0	1	0										
ZINC		0	0	0.5	0.5	0	0	0	0	1	0										

Monday, December 18, 2017

Page 2 of 2

PENTOXSD Analysis Results**Hydrodynamics**

<u>SWP Basin</u>		<u>Stream Code:</u>		<u>Stream Name:</u>								
18A		42122		ALLEGHENY RIVER								
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)	
Q7-10 Hydrodynamics												
15.750	2761	0	2761	1.9028	0.0002	7	870	124.29	0.4537	0.1010	1000+	
15.000	2766	0	2766	NA	0	0	0	0	0	0	NA	
Qh Hydrodynamics												
15.750	7559.3	0	7559.3	1.9028	0.0002	10.901	870	79.807	0.7972	0.0575	1000+	
15.000	7571.3	0	7571.3	NA	0	0	0	0	0	0	NA	

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	IMP 403						
AFC								
Q7-10:	CCT (min)	15	PMF	0.009	Analysis pH	7	Analysis Hardness	92.028
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	ANTIMONY		0	0	0	0	1100	1100
	ARSENIC		0	0	0	0	340	340
	CADMIUM		0	0	0	0	1.857	1.96
	LEAD		0	0	0	0	58.99	73.452
	SELENIUM		0	0	0	0	NA	NA
	BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0	0	4500	4500
	HEXACHLOROBUTA-DIENE		0	0	0	0	10	10
	PHENANTHRENE		0	0	0	0	5	5
CFC								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	7	Analysis Hardness	87.533
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	ANTIMONY		0	0	0	0	220	220
	ARSENIC		0	0	0	0	150	150
	CADMIUM		0	0	0	0	0.224	0.245
	LEAD		0	0	0	0	2.176	2.686
	SELENIUM		0	0	0	0	4.6	4.989
	BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0	0	910	910
	HEXACHLOROBUTA-DIENE		0	0	0	0	2	2
	PHENANTHRENE		0	0	0	0	1	1
THH								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	NA	Analysis Hardness	NA

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Internal Monitoring Point 503

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4

Facility: **Cheswick**
 Analysis Hardness (mg/L): **87**

NPDES Permit No.: **PA0001627**
 Discharge Flow (MGD): **0.18**

Outfall: **503**
 Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids	1870000	500000	Yes	4976000000	Monitor
	Chloride		250000		2488000000	Monitor
	Bromide	150000	N/A	No	2488000	Monitor
	Sulfate	4950000	250000	Yes		Monitor
	Fluoride		2000			
Group 2	Total Aluminum	< 50	750	No		
	Total Antimony	< 10	5.6	Yes	5558.14	No Limits/Monitoring
	Total Arsenic	< 17	10	Yes	9925.25	No Limits/Monitoring
	Total Barium	62	2400	No		
	Total Beryllium	< 0.5	N/A	No (Value < QL)		
	Total Boron	317000	1600	Yes	519968.9	Establish Limits
	Total Cadmium	< 1	0.244	Yes	119.94	No Limits/Monitoring
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	< 2	19	No		
	Total Copper	11.1	8.3	Yes	794.79	No Limits/Monitoring
	Total Cyanide	7	N/A	No		
	Total Iron	71.4	1500	No		
	Dissolved Iron	< 10	300	No (Value < QL)		
	Total Lead	< 10	2.7	Yes	2647.85	No Limits/Monitoring
	Total Manganese	13300	1000	Yes	992524.8	No Limits/Monitoring
	Total Mercury	0.039	0.05	No		
	Total Molybdenum	46.3	N/A	No		
	Total Nickel	9.1	46.4	No		
	Total Phenols (Phenolics)	< 10	5	Yes		
	Total Selenium	210	5.0	Yes	4951.86	No Limits/Monitoring
	Total Silver	< 2	3.0	No		
	Total Thallium	< 0.2	0.24	No (Value < QL)		
	Total Zinc	11.7	106.5	No		
Group 3	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	<	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	< 0.2	4.3	No (Value < QL)		
	Carbon Tetrachloride	0.2	15	No		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	< 0.4	0.4	No (Value < QL)		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	175	5.7	Yes	15479.35	No Limits/Monitoring
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	0.4	5500	No		
	Methylene Chloride	0.9	4.6	No		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
Group 4	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		
	2-Nitrophenol	< 4.7	1600	No (Value < QL)		
	4-Nitrophenol	< 4.7	470	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

p-Chloro-m-Cresol	<	4.7	30	No (Value < QL)		
Pentachlorophenol	<	4.7	0.27	No (Value < QL)		
Phenol	<	4.7	10400	No (Value < QL)		
2,4,6-Trichlorophenol	<	4.7	1.4	No (Value < QL)		
Acenaphthene	<	4.7	17	No		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Group 5	Acenaphthylene	<	4.7	N/A	No		
	Anthracene	<	4.7	8300	No		
	Benzo(a)anthracene	<	4.7	0.000086	No (Value < QL)		
	Benzo(a)pyrene	<	0.2	0.0038	No (Value < QL)		
	Benzo(b)fluoranthene	<	0.1	0.0038	No (Value < QL)		
	Benzo(k)fluoranthene	<	0.2	0.0038	No (Value < QL)		
	Bis(2-chloroethoxy)methane	<	4.7	N/A	No		
	Bis(2-chloroethyl)ether	<	4.7	0.03	No (Value < QL)		
	Bis(2-chloroisopropyl)ether	<	4.7	1400	No (Value < QL)		
	Bis(2-ethylhexyl)phthalate	<	1.9	1.2	No (Value < QL)		
	4-bromophenyl phenyl ether	<	4.7	54	No (Value < QL)		
	Butyl benzyl phthalate	<	4.7	35	No (Value < QL)		
	2-chloronaphthalene	<	4.7	1000	No (Value < QL)		
	4-chlorophenyl phenyl ether	<	4.7	N/A	No (Value < QL)		
	Chrysene	<	0.2	0.0038	No (Value < QL)		
	Dibenzo(a,h)anthracene	<	0.2	0.0038	No (Value < QL)		
	1,2-dichlorobenzene	<	4.7	160	No		
	1,3-dichlorobenzene	<	4.7	69	No		
	1,4-dichlorobenzene	<	4.7	150	No		
	3,3-dichlorobenzidine	<	4.7	0.021	No (Value < QL)		
	Diethyl phthalate	<	4.7	800	No (Value < QL)		
	Dimethyl phthalate	<	4.7	500	No (Value < QL)		
	Di-n-butyl phthalate	<	4.7	21	No (Value < QL)		
	2,4-dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	2,6-dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	1,4-dioxane	<	4.7	N/A	No		
	Di-n-octyl phthalate	<	4.7	N/A	No (Value < QL)		
	1,2-diphenylhydrazine	<	4.7	0.036	No (Value < QL)		
	Fluoranthene	<	4.7	40	No		
	Fluorene	<	4.7	1100	No		
	Hexachlorobenzene	<	4.7	0.00028	No (Value < QL)		
	Hexachlorobutadiene	<	4.7	0.44	Yes	641.94	No Limits/Monitoring
	Hexachlorocyclopentadiene	<	4.7	1	No (Value < QL)		
	Hexachloroethane	<	4.7	1.4	No (Value < QL)		
	Indeno(1,2,3-cd)pyrene	<	0.2	0.0038	No (Value < QL)		
	Isophorone	<	4.7	35	No (Value < QL)		
	Naphthalene	<	4.7	43	No		
	Nitrobenzene	<	4.7	17	No (Value < QL)		
	n-nitrosodimethylamine	<	4.7	0.00069	No (Value < QL)		
	n-nitrosodi-n-propylamine	<	4.7	0.005	No (Value < QL)		
	n-nitrosodiphenylamine	<	4.7	3.3	No (Value < QL)		
	Phenanthrene	<	4.7	1	Yes	320.97	No Limits/Monitoring
	Pyrene	<	4.7	830	No		
	1,2,4-trichlorobenzene	<	4.7	26	No		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	15.75	734.80	11500.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	2761	0	0	870	7	0	0	87	7	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	IMP 503	0.18	0	0	0	0.01	0.1	0.1	0.1	165	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ALUMINUM	1E+10	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+11	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+11	0	0.5	0.5	0	0	0	0	1	0
BARIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
BIS(2-ETHYLHEXYL) PHTHALATE	1E+08	0	0.5	0.5	0	0	0	0	1	0
BORON	1E+11	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHLOROFORM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	1E+11	0	0.5	0.5	0	0	0	0	1	0
COBALT	1E+11	0	0.5	0.5	0	0	0	0	1	0
COPPER	1E+11	0	0.5	0.5	0	0	0	0	1	0
CYANIDE, FREE	1E+11	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1000000	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+11	0	0.5	0.5	0	0	0	0	1	0
LITHIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+11	0	0.5	0.5	0	0	0	0	1	0
MERCURY	1E+11	0	0.5	0.5	0	0	0	0	1	0
NICKEL	1E+11	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1E+07	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
SILVER	1E+11	0	0.5	0.5	0	0	0	0	1	0
THALLIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+11	0	0.5	0.5	0	0	0	0	1	0

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

ZINC			1E+11	0	0.5	0.5	0	0	0	0	0	1	0	
Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)				Apply FC					
42122	15.00	734.00	11550.00	0.00000	0.00				<input checked="" type="checkbox"/>					
Stream Data														
	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary		Stream		Analysis	
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	Hard	pH	Hard	pH	Hard	pH
Q7-10	0.1	0	0	0	0	0	0	0	87	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0
Discharge Data														
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH			
		(mgd)	(mgd)	(mgd)						(mg/L)				
		0	0	0	0	0	0	0	0	0	100	7		
Parameter Data														
Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc				
	(µg/L)	(µg/L)			(µg/L)					(µg/L)				
ALUMINUM	0	0	0.5	0.5	0	0	0	0	1	0				
ANTIMONY	0	0	0.5	0.5	0	0	0	0	1	0				
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0				
BARIUM	0	0	0.5	0.5	0	0	0	0	1	0				
BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0.5	0.5	0	0	0	0	1	0				
BORON	0	0	0.5	0.5	0	0	0	0	1	0				
CADMIUM	0	0	0.5	0.5	0	0	0	0	1	0				
CHLOROFORM	0	0	0.5	0.5	0	0	0	0	1	0				
CHROMIUM, VI	0	0	0.5	0.5	0	0	0	0	1	0				
COBALT	0	0	0.5	0.5	0	0	0	0	1	0				
COPPER	0	0	0.5	0.5	0	0	0	0	1	0				
CYANIDE, FREE	0	0	0.5	0.5	0	0	0	0	1	0				
DISSOLVED IRON	0	0	0.5	0.5	0	0	0	0	1	0				
HEXACHLOROBUTA-DIENE	0	0	0.5	0.5	0	0	0	0	1	0				
LEAD	0	0	0.5	0.5	0	0	0	0	1	0				
LITHIUM	0	0	0.5	0.5	0	0	0	0	1	0				
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0				
MERCURY	0	0	0.5	0.5	0	0	0	0	1	0				
NICKEL	0	0	0.5	0.5	0	0	0	0	1	0				
N-NITROSODI-PHENYLAMINE	0	0	0.5	0.5	0	0	0	0	1	0				
PHENANTHRENE	0	0	0.5	0.5	0	0	0	0	1	0				
PHENOLICS (PWS)	0	0	0.5	0.5	0	0	0	0	1	0				
SELENIUM	0	0	0.5	0.5	0	0	0	0	1	0				
SILVER	0	0	0.5	0.5	0	0	0	0	1	0				
THALLIUM	0	0	0.5	0.5	0	0	0	0	1	0				
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0				
ZINC	0	0	0.5	0.5	0	0	0	0	1	0				

Monday, December 18, 2017

Page 2 of 2

PENTOXSD Analysis Results**Hydrodynamics**

<u>SWP Basin</u>		<u>Stream Code:</u>		<u>Stream Name:</u>								
18A		42122		ALLEGHENY RIVER								
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)	
Q7-10 Hydrodynamics												
15.750	2761	0	2761	0.27846	0.0002	7	870	124.29	0.4534	0.1011	1000+	
15.000	2766	0	2766	NA	0	0	0	0	0	0	NA	
Qh Hydrodynamics												
15.750	7559.3	0	7559.3	0.27846	0.0002	10.903	870	79.794	0.7969	0.0575	1000+	
15.000	7571.3	0	7571.3	NA	0	0	0	0	0	0	NA	

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number							
15.75	Cheswick	IMP 503							
AFC									
Q7-10:	CCT (min)	15	PMF	0.009	Analysis pH	7	Analysis Hardness	87.778	
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	1100	1100	110167.7
	ARSENIC		0	0	0	0	340	340	34051.84
	CADMIUM		Dissolved WQC.		Chemical translator of 1 applied.		1.774	1.868	187.129
	COPPER		Dissolved WQC.		Chemical translator of 0.949 applied.		11.886	12.381	1240.003
	LEAD		0	0	0	0	56.021	69.162	6926.707
	SELENIUM		Dissolved WQC.		Chemical translator of 0.81 applied.		NA	NA	NA
	CHLOROFORM		0	0	0	0	1900	1900	190289.7
	HEXACHLOROBUTA-DIENE		0	0	0	0	10	10	1001.525
	PHENANTHRENE		0	0	0	0	5	5	500.762
	MANGANESE		0	0	0	0	NA	NA	NA
	BORON		0	0	0	0	8100	8100	811235
CFC									
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	7	Analysis Hardness	87.078	
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY		0	0	0	0	220	220	218355.4
	ARSENIC		0	0	0	0	150	150	148878.7
	CADMIUM		Dissolved WQC.		Chemical translator of 1 applied.		0.223	0.244	242.43
	COPPER		Dissolved WQC.		Chemical translator of 0.915 applied.		7.957	8.289	8226.715
	LEAD		Dissolved WQC.		Chemical translator of 0.96 applied.		2.164	2.668	2647.848
	SELENIUM		Dissolved WQC.		Chemical translator of 0.811 applied.		4.6	4.989	4951.858
			Dissolved WQC.		Chemical translator of 0.922 applied.				

Monday, December 18, 2017

Page 1 of 3

PENTOXSD Analysis Results**Wasteload Allocations**

RMI	Name	Permit Number						
15.75	Cheswick	IMP 503						
	CHLOROFORM	0	0	0	0	390	390	387084.7
	HEXACHLOROBUTA-DIENE	0	0	0	0	2	2	1985.049
	PHENANTHRENE	0	0	0	0	1	1	992.525
	MANGANESE	0	0	0	0	NA	NA	NA
	BORON	0	0	0	0	1600	1600	1580000

THH

Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	NA	Analysis Hardness	NA
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY	0	0	0	0	5.6	5.6	5558.139
	ARSENIC	0	0	0	0	10	10	9925.247
	CADMIUM	0	0	0	0	NA	NA	NA
	COPPER	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	SELENIUM	0	0	0	0	NA	NA	NA
	CHLOROFORM	0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE	0	0	0	0	NA	NA	NA
	PHENANTHRENE	0	0	0	0	NA	NA	NA
	MANGANESE	0	0	0	0	1000	1000	992524.8
	BORON	0	0	0	0	3100	3100	3070000

CRL

Qh:	CCT (min)	720	PMF	0.1				
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	IMP 503						
	ARSENIC	0	0	0	0	NA	NA	NA
	CADMIUM	0	0	0	0	NA	NA	NA
	COPPER	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	SELENIUM	0	0	0	0	NA	NA	NA
	CHLOROFORM	0	0	0	0	5.7	5.7	15479.35
	HEXACHLOROBUTA-DIENE	0	0	0	0	0.44	0.44	1194.897
	PHENANTHRENE	0	0	0	0	NA	NA	NA
	MANGANESE	0	0	0	0	NA	NA	NA
	BORON	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

<u>SWP Basin</u>	<u>Stream Code:</u>	<u>Stream Name:</u>			
18A	42122	ALLEGHENY RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)		
15.75	Cheswick	IMP 503	0.1800		
Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
ANTIMONY	5558.139	THH	8671.59	5558.139	THH
ARSENIC	9925.247	THH	15484.98	9925.247	THH
BORON	519968.9	AFC	811235.1	519968.9	AFC
CADMIUM	119.942	AFC	187.129	119.942	AFC
CHLOROFORM	15479.35	CRL	24150.28	15479.35	CRL
COPPER	794.792	AFC	1240.003	794.792	AFC
HEXACHLOROBUTA-DIENE	641.937	AFC	1001.525	641.937	AFC
LEAD	2647.848	CFC	4131.068	2647.848	CFC
MANGANESE	992524.8	THH	1540000	992524.8	THH
PHENANTHRENE	320.968	AFC	500.762	320.968	AFC
SELENIUM	4951.858	CFC	7725.695	4951.858	CFC

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Internal Monitoring Point 603

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4

Facility: **Cheswick**NPDES Permit No.: **PA0001627**Outfall: **603**Analysis Hardness (mg/L): **87**Discharge Flow (MGD): **3.22**Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		500000			
	Chloride		250000			
	Bromide	100	N/A	No		
	Sulfate	106000	250000	No		
	Fluoride		2000			
Group 2	Total Aluminum	330	750	No		
	Total Antimony	< 10	5.6	Yes	315.99	No Limits/Monitoring
	Total Arsenic	10	10	Yes	564.27	No Limits/Monitoring
	Total Barium	72.1	2400	No		
	Total Beryllium	0.5	N/A	No		
	Total Boron	469	1600	No		
	Total Cadmium	< 1	0.244	Yes	8.85	Monitor
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	3	19	No		
	Total Copper	< 5	8.3	No		
	Total Cyanide	< 5	N/A	No (Value < QL)		
	Total Iron	71.8	1500	No		
	Dissolved Iron	315	300	Yes	16928.06	No Limits/Monitoring
	Total Lead	< 10	2.7	Yes	153.41	No Limits/Monitoring
	Total Manganese	1670	1000	Yes	24598	No Limits/Monitoring
	Total Mercury	< 0.1	0.05	No (Value < QL)		
	Total Molybdenum	13	N/A	No		
	Total Nickel	8	46.4	No		
	Total Phenols (Phenolics)	< 10	5	Yes		
	Total Selenium	< 10	5.0	Yes	281.52	No Limits/Monitoring
	Total Silver	< 2	3.0	No		
	Total Thallium	< 0.2	0.24	No (Value < QL)		
	Total Zinc	35.4	106.5	No		
Group 3	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	< 0.07	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	< 0.2	4.3	No (Value < QL)		
	Carbon Tetrachloride	< 0.2	0.23	No (Value < QL)		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	< 0.4	0.4	No (Value < QL)		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	< 0.2	5.7	No (Value < QL)		
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	< 0.2	5500	No (Value < QL)		
	Methylene Chloride	< 0.2	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
Group 4	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		
	2-Nitrophenol	< 4.7	1600	No (Value < QL)		
	4-Nitrophenol	< 4.7	470	No (Value < QL)		
	p-Chloro-m-Cresol	< 4.7	30	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

	Pentachlorophenol	<	4.7	0.27	No (Value < QL)		
	Phenol	<	4.7	10400	No (Value < QL)		
	2,4,6-Trichlorophenol	<	4.7	1.4	No (Value < QL)		
	Acenaphthene	<	4.7	17	No		
Group 5	Acenaphthylene	<	4.7	N/A	No		
	Anthracene	<	4.7	8300	No		
	Benzidine	<	4.7	0.00086	No (Value < QL)		
	Benzo(a)Anthracene	<	0.2	0.0038	No (Value < QL)		
	Benzo(a)Pyrene	<	0.1	0.0038	No (Value < QL)		
	3,4-Benzofluoranthene	<	0.2	0.0038	No (Value < QL)		
	Benzo(ghi)Perylene	<	4.7	N/A	No		
	Benzo(k)Fluoranthene	<	0.2	0.0038	No (Value < QL)		
	Bis(2-Chloroethoxy)Methane	<	4.7	N/A	No (Value < QL)		
	Bis(2-Chloroethyl)Ether	<	4.7	0.03	No (Value < QL)		
	Bis(2-Chloroisopropyl)Ether	<	4.7	1400	No (Value < QL)		
	Bis(2-Ethylhexyl)Phthalate	<	1.9	1.2	No (Value < QL)		
	4-Bromophenyl Phenyl Ether	<	4.7	54	No (Value < QL)		
	Butyl Benzyl Phthalate	<	4.7	35	No (Value < QL)		
	2-Chloronaphthalene	<	4.7	1000	No (Value < QL)		
	4-Chlorophenyl Phenyl Ether	<	4.7	N/A	No (Value < QL)		
	Chrysene	<	0.2	0.0038	No (Value < QL)		
	Dibenzo(a,h)Anthracene	<	0.2	0.0038	No (Value < QL)		
	1,2-Dichlorobenzene	<	4.7	160	No		
	1,3-Dichlorobenzene	<	4.7	69	No		
	1,4-Dichlorobenzene	<	4.7	150	No		
	3,3-Dichlorobenzidine	<	4.7	0.021	No (Value < QL)		
	Diethyl Phthalate	<	4.7	800	No (Value < QL)		
	Dimethyl Phthalate	<	4.7	500	No (Value < QL)		
	Di-n-Butyl Phthalate	<	4.7	21	No (Value < QL)		
	2,4-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	2,6-Dinitrotoluene	<	4.7	0.05	No (Value < QL)		
	1,4-Dioxane	<	4.7	N/A	No		
	Di-n-Octyl Phthalate	<	4.7	N/A	No (Value < QL)		
	1,2-Diphenylhydrazine	<	4.7	0.036	No (Value < QL)		
	Fluoranthene	<	4.7	40	No		
	Fluorene	<	4.7	1100	No		
	Hexachlorobenzene	<	4.7	0.00028	No (Value < QL)		
	Hexachlorobutadiene	<	4.7	0.44	Yes	41 94	No Limits/Monitoring
	Hexachlorocyclopentadiene	<	4.7	1	No (Value < QL)		
	Hexachloroethane	<	4.7	1.4	No (Value < QL)		
	Indeno(1,2,3-cd)Pyrene	<	0.2	0.0038	No (Value < QL)		
	Isophorone	<	1.9	35	No (Value < QL)		
	Naphthalene	<	4.7	43	No		
	Nitrobenzene	<	4.7	17	No (Value < QL)		
	n-Nitrosodimethylamine	<	4.7	0.00069	No (Value < QL)		
	n-Nitrosodi-n-Propylamine	<	4.7	0.005	No (Value < QL)		
	n-Nitrosodiphenylamine	<	4.7	3.3	No (Value < QL)		
	Phenanthrene	<	4.7	1	Yes		
	Pyrene	<	4.7	830	No		
	1,2,4-Trichlorobenzene	<	4.7	26	No		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	15.75	734.80	11500.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	2761	0	0	870	7	0	0	87	7	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	IMP 603	3.22	0	0	0	0.01	0.1	0.1	0.1	165	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ALUMINUM	1E+10	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+11	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+11	0	0.5	0.5	0	0	0	0	1	0
BARIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
BIS(2-ETHYLHEXYL) PHTHALATE	1E+08	0	0.5	0.5	0	0	0	0	1	0
BORON	1E+11	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHLOROFORM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	1E+11	0	0.5	0.5	0	0	0	0	1	0
COBALT	1E+11	0	0.5	0.5	0	0	0	0	1	0
COPPER	1E+11	0	0.5	0.5	0	0	0	0	1	0
CYANIDE, FREE	1E+11	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1000000	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+11	0	0.5	0.5	0	0	0	0	1	0
LITHIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+11	0	0.5	0.5	0	0	0	0	1	0
MERCURY	1E+11	0	0.5	0.5	0	0	0	0	1	0
NICKEL	1E+11	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1E+07	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
SILVER	1E+11	0	0.5	0.5	0	0	0	0	1	0
THALLIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+11	0	0.5	0.5	0	0	0	0	1	0

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

ZINC			1E+11	0	0.5	0.5	0	0	0	0	1	0		
Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)				Apply FC					
42122	15.00	734.00	11550.00	0.00000	0.00				<input checked="" type="checkbox"/>					
Stream Data														
LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary		Stream		Analysis		
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	Hard	pH	Hard	pH	Hard	pH	
Q7-10	0.1	0	0	0	0	0	0	87	7	0	0	0	0	
Qh		0	0	0	0	0	0	100	7	0	0	0	0	
Discharge Data														
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH			
		(mgd)	(mgd)	(mgd)						(mg/L)				
		0	0	0	0	0	0	0	0	100	7			
Parameter Data														
Parameter Name		Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc			
		(µg/L)	(µg/L)			(µg/L)					(µg/L)			
ALUMINUM		0	0	0.5	0.5	0	0	0	0	1	0			
ANTIMONY		0	0	0.5	0.5	0	0	0	0	1	0			
ARSENIC		0	0	0.5	0.5	0	0	0	0	1	0			
BARIUM		0	0	0.5	0.5	0	0	0	0	1	0			
BIS(2-ETHYLHEXYL) PHTHALATE		0	0	0.5	0.5	0	0	0	0	1	0			
BORON		0	0	0.5	0.5	0	0	0	0	1	0			
CADMIUM		0	0	0.5	0.5	0	0	0	0	1	0			
CHLOROFORM		0	0	0.5	0.5	0	0	0	0	1	0			
CHROMIUM, VI		0	0	0.5	0.5	0	0	0	0	1	0			
COBALT		0	0	0.5	0.5	0	0	0	0	1	0			
COPPER		0	0	0.5	0.5	0	0	0	0	1	0			
CYANIDE, FREE		0	0	0.5	0.5	0	0	0	0	1	0			
DISSOLVED IRON		0	0	0.5	0.5	0	0	0	0	1	0			
HEXACHLOROBUTA-DIENE		0	0	0.5	0.5	0	0	0	0	1	0			
LEAD		0	0	0.5	0.5	0	0	0	0	1	0			
LITHIUM		0	0	0.5	0.5	0	0	0	0	1	0			
MANGANESE		0	0	0.5	0.5	0	0	0	0	1	0			
MERCURY		0	0	0.5	0.5	0	0	0	0	1	0			
NICKEL		0	0	0.5	0.5	0	0	0	0	1	0			
N-NITROSODI-PHENYLAMINE		0	0	0.5	0.5	0	0	0	0	1	0			
PHENANTHRENE		0	0	0.5	0.5	0	0	0	0	1	0			
PHENOLICS (PWS)		0	0	0.5	0.5	0	0	0	0	1	0			
SELENIUM		0	0	0.5	0.5	0	0	0	0	1	0			
SILVER		0	0	0.5	0.5	0	0	0	0	1	0			
THALLIUM		0	0	0.5	0.5	0	0	0	0	1	0			
TOTAL IRON		0	0	0.5	0.5	0	0	0	0	1	0			
ZINC		0	0	0.5	0.5	0	0	0	0	1	0			

Monday, December 18, 2017

Page 2 of 2

PENTOXSD Analysis Results**Hydrodynamics**

<u>SWP Basin</u>		<u>Stream Code:</u>		<u>Stream Name:</u>							
18A		42122		ALLEGHENY RIVER							
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
15.750	2761	0	2761	4.98133	0.0002	7	870	124.29	0.4542	0.1009	1000+
15.000	2766	0	2766	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
15.750	7559.3	0	7559.3	4.98133	0.0002	10.898	870	79.832	0.7978	0.0574	1000+
15.000	7571.3	0	7571.3	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	IMP 603						
AFC								
Q7-10:	CCT (min)	15	PMF	0.009	Analysis pH	7	Analysis Hardness	98.921
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	DISSOLVED IRON		0	0	0	0	NA	NA
	MANGANESE		0	0	0	0	NA	NA
	ANTIMONY		0	0	0	0	1100	1100
	ARSENIC		0	0	0	0	340	340
	CADMIUM		Dissolved WQC. Chemical translator of 1 applied.				1.993	2.11
								13.804
	LEAD		Dissolved WQC. Chemical translator of 0.944 applied.				63.823	80.526
								526.856
	SELENIUM		Dissolved WQC. Chemical translator of 0.793 applied.				NA	NA
								NA
	HEXACHLOROBUTA-DIENE		0	0	0	0	10	10
								65.427
CFC								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	7	Analysis Hardness	88.382
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	DISSOLVED IRON		0	0	0	0	NA	NA
	MANGANESE		0	0	0	0	NA	NA
	ANTIMONY		0	0	0	0	220	220
	ARSENIC		0	0	0	0	150	150
	CADMIUM		Dissolved WQC. Chemical translator of 1 applied.					8464.028
							0.226	0.247
	LEAD		Dissolved WQC. Chemical translator of 0.914 applied.				2.199	2.719
								153.41
	SELENIUM		Dissolved WQC. Chemical translator of 0.809 applied.				4.6	4.989
								281.522
	HEXACHLOROBUTA-DIENE		Dissolved WQC. Chemical translator of 0.922 applied.				2	2
								112.854
THH								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	NA	Analysis Hardness	NA

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	IMP 603						
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	DISSOLVED IRON	0	0	0	0	300	300	16928.06
	MANGANESE	0	0	0	0	1000	1000	56426.86
	ANTIMONY	0	0	0	0	5.6	5.6	315.99
	ARSENIC	0	0	0	0	10	10	564.269
	CADMIUM	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	SELENIUM	0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE	0	0	0	0	NA	NA	NA

CRL

Qh:	CCT (min)	720	PMF	0.1				
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	HEXACHLOROBUTA-DIENE	0	0	0	0	0.44	0.44	67.211
	DISSOLVED IRON	0	0	0	0	NA	NA	NA
	MANGANESE	0	0	0	0	NA	NA	NA
	ANTIMONY	0	0	0	0	NA	NA	NA
	ARSENIC	0	0	0	0	NA	NA	NA
	CADMIUM	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	SELENIUM	0	0	0	0	NA	NA	NA

Monday, December 18, 2017

Page 2 of 2

PENTOXSD Analysis Results**Recommended Effluent Limitations**

<u>SWP Basin</u>	<u>Stream Code:</u>	<u>Stream Name:</u>			
18A	42122	ALLEGHENY RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)		
15.75	Cheswick	IMP 603	3.2200		
Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
				WQBEL (µg/L)	WQBEL Criterion
ANTIMONY	315.99	THH	492.996	315.99	THH
ARSENIC	564.269	THH	880.35	564.269	THH
CADMIUM	8.848	AFC	13.804	8.848	AFC
DISSOLVED IRON	16928.06	THH	26410.49	16928.06	THH
HEXACHLOROBUTA-DIENE	41.936	AFC	65.427	41.936	AFC
LEAD	153.41	CFC	239.344	153.41	CFC
MANGANESE	56426.86	THH	88034.97	56426.86	THH
SELENIUM	281.522	CFC	439.22	281.522	CFC

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Outfall 004

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4

Facility: **Cheswick**
 Analysis Hardness (mg/L): **87**

NPDES Permit No.: **PA0001627**
 Discharge Flow (MGD): **0.75**

Outfall: **004**
 Analysis pH (SU): **7**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids	286	500000	No		
	Chloride		250000			
	Bromide	< 100	N/A	No (Value < QL)		
	Sulfate					
	Fluoride		2000			
Group 2	Total Aluminum	160	750	No		
	Total Antimony	< 10	5.6	Yes	1338.21	No Limits/Monitoring
	Total Arsenic	< 10	10	Yes	2389.66	No Limits/Monitoring
	Total Barium	40	2400	No		
	Total Beryllium	0.5	N/A	No		
	Total Boron	73.6	1600	No		
	Total Cadmium	< 1	0.244	Yes	30.51	No Limits/Monitoring
	Total Chromium		N/A			
	Hexavalent Chromium	< 2	10.4	No		
	Total Cobalt	< 2	19	No		
	Total Copper	< 5	8.3	No		
	Total Cyanide	< 5	N/A	No (Value < QL)		
	Total Iron	576	1500	No		
	Dissolved Iron	59	300	No		
	Total Lead	< 10	2.7	Yes	639.82	No Limits/Monitoring
	Total Manganese	1540	1000	Yes	2389.66	No Limits/Monitoring
	Total Mercury	< 0.005	0.05	No (Value < QL)		
	Total Molybdenum	66	N/A	No		
	Total Nickel	5	46.4	No		
	Total Phenols (Phenolics)	< 10	5	Yes		
	Total Selenium	2.3	5.0	No		
	Total Silver	< 2	3.0	No		
	Total Thallium	< 10	0.24	Yes	57.35	No Limits/Monitoring
	Total Zinc	8.5	106.5	No		
Group 3	Acrolein	< 2	3	No (Value < QL)		
	Acrylamide	< 0.07	0.07			
	Acrylonitrile	< 0.5	0.051	No (Value < QL)		
	Benzene	< 0.2	1.2	No (Value < QL)		
	Bromoform	< 0.2	4.3	No (Value < QL)		
	Carbon Tetrachloride	< 0.2	0.23	No (Value < QL)		
	Chlorobenzene	< 0.2	130	No (Value < QL)		
	Chlorodibromomethane	< 0.4	0.4	No (Value < QL)		
	Chloroethane	< 0.2	N/A	No (Value < QL)		
	2-Chloroethyl Vinyl Ether	< 0.5	3500	No (Value < QL)		
	Chloroform	< 0.2	5.7	No (Value < QL)		
	Dichlorobromomethane	< 0.2	0.55	No (Value < QL)		
	1,1-Dichloroethane	< 0.2	N/A	No (Value < QL)		
	1,2-Dichloroethane	< 0.2	0.38	No (Value < QL)		
	1,1-Dichloroethylene	< 0.2	33	No (Value < QL)		
	1,2-Dichloropropane	< 0.2	2200	No (Value < QL)		
	1,3-Dichloropropylene	< 0.2	0.34	No (Value < QL)		
	Ethylbenzene	< 0.2	530	No (Value < QL)		
	Methyl Bromide	< 0.5	47	No (Value < QL)		
	Methyl Chloride	< 0.2	5500	No (Value < QL)		
	Methylene Chloride	< 0.2	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	< 0.2	0.17	No (Value < QL)		
	Tetrachloroethylene	< 0.2	0.69	No (Value < QL)		
	Toluene	< 0.2	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	< 0.5	140	No (Value < QL)		
	1,1,1-Trichloroethane	< 0.2	610	No (Value < QL)		
	1,1,2-Trichloroethane	< 0.5	0.59	No (Value < QL)		
	Trichloroethylene	< 0.2	2.5	No (Value < QL)		
	Vinyl Chloride	< 0.2	0.025	No (Value < QL)		
4	2-Chlorophenol	< 4.7	81	No (Value < QL)		
	2,4-Dichlorophenol	< 4.7	77	No (Value < QL)		
	2,4-Dimethylphenol	< 4.7	130	No (Value < QL)		
	4,6-Dinitro-o-Cresol	< 4.7	13	No (Value < QL)		
	2,4-Dinitrophenol	< 4.7	69	No (Value < QL)		
	2-Nitrophenol	< 4.7	1600	No (Value < QL)		
	4-Nitrophenol	< 4.7	470	No (Value < QL)		
	p-Chloro-m-Cresol	< 4.7	30	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station**NPDES Permit No. PA0001627**

Pentachlorophenol	<	0.28	0.27	No (Value < QL)		
Phenol	<	4.7	10400	No (Value < QL)		
2,4,6-Trichlorophenol	<	4.7	1.4	No (Value < QL)		

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
42122	15.75	734.80	11500.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	2761	0	0	870	7	0	0	87	7	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Cheswick	004	0.75	0	0	0	0.01	0.1	0.1	0.1	165	7

Parameter Data

Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc
	(µg/L)	(µg/L)			(µg/L)					(µg/L)
ALUMINUM	1E+10	0	0.5	0.5	0	0	0	0	1	0
ANTIMONY	1E+11	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	1E+11	0	0.5	0.5	0	0	0	0	1	0
BARIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
BIS(2-ETHYLHEXYL) PHTHALATE	1E+08	0	0.5	0.5	0	0	0	0	1	0
BORON	1E+11	0	0.5	0.5	0	0	0	0	1	0
CADMIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHLOROFORM	1E+11	0	0.5	0.5	0	0	0	0	1	0
CHROMIUM, VI	1E+11	0	0.5	0.5	0	0	0	0	1	0
COBALT	1E+11	0	0.5	0.5	0	0	0	0	1	0
COPPER	1E+11	0	0.5	0.5	0	0	0	0	1	0
CYANIDE, FREE	1E+11	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1000000	0	0.5	0.5	0	0	0	0	1	0
HEXACHLOROBUTA-DIENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
LEAD	1E+11	0	0.5	0.5	0	0	0	0	1	0
LITHIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+11	0	0.5	0.5	0	0	0	0	1	0
MERCURY	1E+11	0	0.5	0.5	0	0	0	0	1	0
NICKEL	1E+11	0	0.5	0.5	0	0	0	0	1	0
N-NITROSODI-PHENYLAMINE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENANTHRENE	1E+11	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1E+07	0	0.5	0.5	0	0	0	0	1	0
SELENIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
SILVER	1E+11	0	0.5	0.5	0	0	0	0	1	0
THALLIUM	1E+11	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+11	0	0.5	0.5	0	0	0	0	1	0

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

ZINC				1E+11	0	0.5	0.5	0	0	0	0	1	0
Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)				Apply FC				
42122	15.00	734.00	11550.00	0.00000	0.00				<input checked="" type="checkbox"/>				
Stream Data													
LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	pH	Stream Hard	pH	Analysis Hard	pH
(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0	0	0	0	0	0	87	7	0	0	0	0
Qh		0	0	0	0	0	0	100	7	0	0	0	0
Discharge Data													
Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH		
		(mgd)	(mgd)	(mgd)						(mg/L)			
		0	0	0	0	0	0	0	0	100	7		
Parameter Data													
Parameter Name	Disc Conc	Trib Conc	Disc Daily CV	Disc Hourly CV	Steam Conc	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc			
	(µg/L)	(µg/L)			(µg/L)					(µg/L)			
ALUMINUM	0	0	0.5	0.5	0	0	0	0	1	0			
ANTIMONY	0	0	0.5	0.5	0	0	0	0	1	0			
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0			
BARIUM	0	0	0.5	0.5	0	0	0	0	1	0			
BIS(2-ETHYLHEXYL) PHTHALATE	0	0	0.5	0.5	0	0	0	0	1	0			
BORON	0	0	0.5	0.5	0	0	0	0	1	0			
CADMIUM	0	0	0.5	0.5	0	0	0	0	1	0			
CHLOROFORM	0	0	0.5	0.5	0	0	0	0	1	0			
CHROMIUM, VI	0	0	0.5	0.5	0	0	0	0	1	0			
COBALT	0	0	0.5	0.5	0	0	0	0	1	0			
COPPER	0	0	0.5	0.5	0	0	0	0	1	0			
CYANIDE, FREE	0	0	0.5	0.5	0	0	0	0	1	0			
DISSOLVED IRON	0	0	0.5	0.5	0	0	0	0	1	0			
HEXACHLOROBUTA-DIENE	0	0	0.5	0.5	0	0	0	0	1	0			
LEAD	0	0	0.5	0.5	0	0	0	0	1	0			
LITHIUM	0	0	0.5	0.5	0	0	0	0	1	0			
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0			
MERCURY	0	0	0.5	0.5	0	0	0	0	1	0			
NICKEL	0	0	0.5	0.5	0	0	0	0	1	0			
N-NITROSODI-PHENYLAMINE	0	0	0.5	0.5	0	0	0	0	1	0			
PHENANTHRENE	0	0	0.5	0.5	0	0	0	0	1	0			
PHENOLICS (PWS)	0	0	0.5	0.5	0	0	0	0	1	0			
SELENIUM	0	0	0.5	0.5	0	0	0	0	1	0			
SILVER	0	0	0.5	0.5	0	0	0	0	1	0			
THALLIUM	0	0	0.5	0.5	0	0	0	0	1	0			
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0			
ZINC	0	0	0.5	0.5	0	0	0	0	1	0			

Monday, December 18, 2017

Page 2 of 2

PENTOXSD Analysis Results**Hydrodynamics**

<u>SWP Basin</u>		<u>Stream Code:</u>		<u>Stream Name:</u>							
18A		42122		ALLEGHENY RIVER							
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
15.750	2761	0	2761	1.16024	0.0002	7	870	124.29	0.4536	0.1011	1000+
15.000	2766	0	2766	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
15.750	7559.3	0	7559.3	1.16024	0.0002	10.902	870	79.801	0.7971	0.0575	1000+
15.000	7571.3	0	7571.3	NA	0	0	0	0	0	0	NA

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	004						
AFC								
Q7-10:	CCT (min)	15	PMF	0.009	Analysis pH	7	Analysis Hardness	90.145
	Parameter		Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	ANTIMONY		0	0	0	0	1100	1100
	ARSENIC		0	0	0	0	340	340
	CADMIUM		0	0	0	0	1.82	1.92
	LEAD		0	0	0	0	57.673	71.544
	SELENIUM		0	0	0	0	NA	NA
	THALLIUM		0	0	0	0	65	65
	HEXACHLOROBUTA-DIENE		0	0	0	0	10	10
	MANGANESE		0	0	0	0	NA	NA
CFC								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	7	Analysis Hardness	87.326
	Parameter		Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)
								WLA (µg/L)
	ANTIMONY		0	0	0	0	220	220
	ARSENIC		0	0	0	0	150	150
	CADMIUM		0	0	0	0	0.224	0.245
	LEAD		0	0	0	0	2.171	2.677
	SELENIUM		0	0	0	0	4.6	4.989
	THALLIUM		0	0	0	0	13	13
	HEXACHLOROBUTA-DIENE		0	0	0	0	2	2
	MANGANESE		0	0	0	0	NA	NA
THH								
Q7-10:	CCT (min)	720	PMF	0.1	Analysis pH	NA	Analysis Hardness	NA

Monday, December 18, 2017

Page 1 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
15.75	Cheswick	004						
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY	0	0	0	0	5.6	5.6	1338.209
	ARSENIC	0	0	0	0	10	10	2389.66
	CADMIUM	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	SELENIUM	0	0	0	0	NA	NA	NA
	THALLIUM	0	0	0	0	0.24	0.24	57.352
	HEXACHLOROBUTA-DIENE	0	0	0	0	NA	NA	NA
	MANGANESE	0	0	0	0	1000	1000	238966

CRL

Qh:	CCT (min)	720	PMF	0.1				
	Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
	ANTIMONY	0	0	0	0	NA	NA	NA
	ARSENIC	0	0	0	0	NA	NA	NA
	CADMIUM	0	0	0	0	NA	NA	NA
	LEAD	0	0	0	0	NA	NA	NA
	SELENIUM	0	0	0	0	NA	NA	NA
	THALLIUM	0	0	0	0	NA	NA	NA
	HEXACHLOROBUTA-DIENE	0	0	0	0	0.44	0.44	287.11
	MANGANESE	0	0	0	0	NA	NA	NA

Monday, December 18, 2017

Page 2 of 2

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

PENTOXSD Analysis Results

Recommended Effluent Limitations

<u>SWP Basin</u>	<u>Stream Code:</u>	<u>Stream Name:</u>			
18A	42122	ALLEGHENY RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)		
15.75	Cheswick	004	0.7500		
Parameter	Effluent Limit	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent	
	(µg/L)			WQBEL (µg/L)	WQBEL Criterion
ANTIMONY	1338.209	THH	2087.822	1338.209	THH
ARSENIC	2389.66	THH	3728.253	2389.66	THH
CADMIUM	30.51	AFC	47.601	30.51	AFC
HEXACHLOROBUTA-DIENE	158.936	AFC	247.966	158.936	AFC
LEAD	639.822	CFC	998.225	639.822	CFC
MANGANESE	238966	THH	372825.3	238966	THH
SELENIUM	1192.238	CFC	1860.083	1192.238	CFC
THALLIUM	57.352	THH	89.478	57.352	THH

Monday, December 18, 2017

Page 1 of 1

Attachment E – Effluent Limitation Guideline Limitation Justification**Submitted by NRG for Cheswick Generating Station****Applicability Date Extension Narrative**

The renewal NPDES for the Cheswick Power Station should not include the new “BAT” limitations for the bottom ash transport water (BATW) and/or flue gas desulfurization (FGD) wastewaters.

The U.S. EPA promulgated a new rule related to the ELGs on November 3, 2015. This rule imposed a number of new effluent guidelines and related conditions, including new “Best Available Technology Economically Achievable” or “BAT” limitations for BATW and FGD wastewater. See, 40 C.F.R. §§ 423.13 (g) and (k). As originally promulgated, the new BATW and FGD limitations were to be achieved “by a date determined by the permitting authority that is as soon as possible beginning November 1, 2018, but no later than November 31, 2023.” *Id.* The rule also defined the phrase “as soon as possible” to mean November 1, 2018, unless the permitting authority establishes a later date, after receiving information from the discharger, which reflects a consideration of the following factors:

- (1) Time to expeditiously plan (including to raise capital), design, procure, and install equipment to comply with the requirements of the rule.
- (2) Changes being made or planned at the plant in response to:
 - a. New source performance standards for greenhouse gases from new fossil fuel-fired electric generating units, under sections 111, 301, 302, and 307(d)(1)(C) of the Clean Air Act, as amended, 42 U.S.C. 7411, 7601, 7602, 7607(d)(1)(C);
 - b. Emission guidelines for greenhouse gases from existing fossil fuel-fired electric generating units, under sections 111, 301, 302, and 307(d) of the Clean Air Act, as amended, 42 U.S.C. 7411, 7601, 7602, 7607(d); or
 - c. Regulations that address the disposal of coal combustion residuals as solid waste, under sections 1006(b), 1008(a), 2002(a), 3001, 4004, and 4005(a) of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. 6906(b),
- (3) For FGD wastewater requirements only, an initial commissioning period for the treatment system to optimize the installed equipment.
- (4) Other factors as appropriate.

See, 40 C.F.R. § 423.11(t) (November 2015 version).

On March 24, 2017, an industry group representing steam electric power generators (the Utility Water Act Group (UWAG)) filed with the Administrator a petition for reconsideration of the 2015 Rule (EPA-HQ-OW-2009-0819-6478). On April 5, 2017, the U.S. Small Business Administration (SBA) filed a separate petition for reconsideration on much the same grounds. Those petitions stressed, among other issues, that (1) new information indicated that the 2015 rule’s limits for FGD wastewater cannot be met by all facilities; (2) the 2015 rule partially relied on unreliable data in developing the “zero discharge” limit for BATW; and (3) the 2015 rule was the second most cost-ineffective ELG Rule ever and therefore deserved to be reconsidered.

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

On April 11, 2017, the Administrator sent to each Governor and State permitting agency a letter notifying each of the petitions for reconsideration, reminding them that the ELG Rule applies only when implemented in an NPDES permit in accordance with applicability dates determined under the rule and encouraging them to make use of the flexibility that § 423.11(t) of the ELG Rule affords to consider “other factors” in selecting an appropriate applicability date. Then on April 12, 2017, Administrator Pruitt issued a letter granting the SBA and UWAG petitions and indicating that the Agency would (1) promptly issue a stay, pursuant to § 705 of the Administrative Procedure Act, of the ELG Rule’s applicability dates; and (2) consider which portions of the ELG Rule warrant a remand and/or further rulemaking. On April 25, 2017, EPA issued a Federal Register notice staying the applicability dates for all new and more restrictive limits, including those for FGD wastewater and BATW (82 Fed. Reg. 19005).

On June 6, 2017, EPA solicited comment on whether it should postpone by rule the applicability dates that have not yet passed for some or all of the new, more restrictive ELG limits in order to “preserve the regulatory status quo ... while reconsideration is ongoing” and avoid “imminent planning and capital expenditures” that companies would otherwise be required to make in order to meet those applicability deadlines (82 Fed. Reg. 26017).

On August 11, 2017, EPA announced its intention to conduct further rulemaking to potentially revise the new, more stringent effluent limitations guidelines and pretreatment standards for existing facilities (PSES) established by the 2015 steam electric guidelines rule for two waste streams: FGD scrubber blowdown (FGD wastewater) (§ 423.13(g)(1)(i)) and BATW (§ 423.13(k)(1)(i)).

On September 18, 2017, EPA issued a final rule (Postponement Rule) postponing the near-term applicability dates for FGD wastewater and BATW from November 1, 2018, to November 1, 2020 (82 Fed. Reg. 43494). The rule became effective upon publication. EPA’s stated purpose for the Postponement Rule is to authorize permit writers to select applicability dates that will avoid any expenditures to comply with the 2015 ELGs for FGD wastewater and BATW until EPA completes further rulemaking for those waste streams. The preamble accompanying the Postponement Rule indicates that EPA will conduct further rulemaking to revise the applicability dates if it has not completed its reconsideration of the FGD wastewater and BATW limits by November 1, 2020.

Achieving the central purpose of the Postponement Rule means that NPDES permit writers must use the November 1, 2020 deadline (the date by which EPA intends to complete the rulemaking) as the starting point, not the endpoint, for compliance expenditures. Determining what is “as soon as possible” by assuming that companies will continue their compliance expenditures during the three-year period EPA estimates it will need to complete further rulemaking is inconsistent with achieving the central purpose of the Postponement Rule.

In light of the acknowledged uncertainty associated with the guidelines, the Department should not include the new BAT limitations in the Cheswick NPDES permit renewal for the BATW and/or FGD wastewaters. Rather, a “re-opener” should be included so that the Department can modify the permit after the guideline issues are conclusively and finally resolved. Imposing the limits in the permit would serve no beneficial purpose, and instead could subject Cheswick Generating Station to stringent and unlawful limitations (e.g., because the limits were included, subsequently revised by EPA or further postponed, but no action was taken by the Department to modify them in the permit). This re-opener approach is consistent with all of the facts, the U.S. EPA September 18, 2017 rulemaking, and the informal guidance that we understand Region III of U.S. EPA has been issuing. Perhaps even more important, it is consistent with how we understand neighboring states are addressing the issue. To do otherwise would once again place Pennsylvania jobs and families at a competitive disadvantage, with no attendant environmental benefit.

**NPDES Permit Fact Sheet
Cheswick Generating Station**

NPDES Permit No. PA0001627

Alternatively, although Cheswick Generating Station does not believe that this is the appropriate course of action, the Department should at least defer all compliance with the new BAT limitations for the BATW and the FGD wastewaters until December 31, 2023 because:

- Cheswick is equipped with an effective wastewater treatment system for FGD wastewater that is discharged at Internal Monitoring Point (IMP 503) and complies with stringent water quality based effluent limitations for selenium, arsenic and mercury. Since October 2014 monthly average:
 - Selenium concentrations have been consistently less than 0.35 mg/l.
 - Arsenic concentrations have been consistently less than 0.010 mg/l, and
 - Mercury concentrations have been consistently less than 0.00025 mg/l.
- An applicability date sooner than December 31, 2023 will require Cheswick to incur compliance expenditures beginning as early as 2018 to initiate engineering work to evaluate biological treatment technologies. At this time, only one full scale biological system (i.e., GE AbMet) has the potential to comply with the 2015 rule's limits for selenium and nitrate/nitrite. As noted in industry petitions, new information was presented that indicated that the 2015 rule's limits for FGD wastewater cannot be met by all facilities using the GE AbMet System. As a result of this uncertainty in the effectiveness of selenium treatment, Cheswick anticipates the need to further evaluate whether the GE AbMet System or other equivalent biological system can, in fact, meet the 2015 rule's limits. This evaluation (e.g., pilot testing) could become unnecessary should US EPA increase or eliminate the 2015 FGD wastewater limits.
- The proposed effluent limitation for boron will require modifications to the operation of the FGD absorber system, coal supply, limestone supply, and/or Cheswick's FGD wastewater treatment system. To identify the most effective and economic alternatives for compliance, detailed engineering studies will be required. Potential changes to fuel and material supplies, the FGD absorber chemistry, and/or the FGD WWTP operations will then need to be assessed to determine how these changes would impact the existing physical/chemical WWTP with respect to arsenic, mercury, and selenium and any proposed FGD biological treatment system.
- An applicability date sooner than December 31, 2023, for the new BAT limitations for BATW will also require compliance expenditures. Cheswick has replaced the bottom ash transport system with a remote drag chain system (remote MDS) that can recycle BATW. However, under the new 2015 rules, Cheswick would need to further evaluate system chemistry and the need to tie the bottom ash recycle system to the FGD Scrubber for use as makeup water. Furthermore, EPA does not consider any activity that requires draining the majority of the water volume from a wet sluicing, closed-loop system containment vessel (e.g., bottom ash hopper, remote MDS, dewatering bin, settling tank, surge tank) a minor maintenance event. Therefore, significant costs may be incurred to capture BATW associated with equipment maintenance and leaks. Additionally, significant costs would be incurred upon station retirement and final decommissioning of the new BATW recycle system.

We suggest as an alternative that the Department include the following provision:

Cheswick Generating Station is required to continue to minimize the discharge of BATW through operation of the new remote MDS and to notify the Department of bypasses or shutdowns of the BATW recycle

**NPDES Permit Fact Sheet
Cheswick Generating Station**

NPDES Permit No. PA0001627

system. If the Steam Electric Power Generating Effluent Guidelines compliance dates or requirements for pollutants in BATW and/or FGD wastewater are further delayed or modified, the Cheswick shall comply with the ELGs as soon as possible, but no later than the final timeline established in 40 CFR 423.

GenOn appreciates the opportunity to provide this information for the Department's consideration, and we look forward to further discussions on these issues.

NPDES Permit Fact Sheet
Cheswick Generating Station

NPDES Permit No. PA0001627

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment)
<input checked="" type="checkbox"/>	PENTOXSD for Windows Model (see Attachment D)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input checked="" type="checkbox"/>	Temperature Model Spreadsheet (see Attachment C)
<input checked="" type="checkbox"/>	Toxics Screening Analysis Spreadsheet (see Attachment D)
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications
<input type="checkbox"/>	Other: